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INDUSTRIAL EFFICIENCY

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INDUSTRIAL EFFICIENCY

A COMPARATIVE STUDY OF INDUSTRIAL LIFE IN ENGLAND, GERMANY AND AMERICA

BY

ARTHUR SHADWELL, M.A., M.D.

AUTHOR OF "DRINK, TEMPERANCE AND LEGISLATION"

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NEW IMPRESSION

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PREFACE TO THIS EDITION.

THE previous impressions of this book have been sold out for some time, and the publishers think a re-issue advisable. At my request it has been reduced to a single volume, and published at a very moderate price without any sacrifice of type. I should have liked the price to be still lower, if that had been possible, as I have received many plaintive letters from persons interested in one or other of the various subjects dealt with, but unable to purchase an expensive book —clergymen, teachers, workmen and others. To bring it within their reach would give me more satisfaction than to secure a larger pecuniary return, though I believe that an appeal to numbers pays best, even for a "stodgy" book like this, if it is sufficiently interesting. I am, of course, no judge of my own book, and though the sale at a high price has been much larger than I dared to hope, a still cheaper edition might not be commercially justified. As it is, Messrs. Longmans have done their best to meet my wishes, and I hope they will not suffer.

The decision to issue a new Edition opens the question of revision. After much consideration I decided to let the text stand, and to make such additions and corrections as seem necessary in the form of a supplementary chapter. The book presents a picture, a whole, complete as far as it goes, and fairly correct at the time it was written. I judge that from the reviews. A very large number of newspapers and other journals have done me the honour of reviewing my work, in many cases at length. I beg to thank the writers, who have for the most part been too kind, as, I think, reviewers generally are. I have especially to thank some gentlemen, whose appreciation is an honour, for

friendly and fair signed criticism. Among them are Mr. L. L. Price, of Oriel College; Professor Ashley of Birmingham University; Mr. Masterman, M.P.; Mr. Macrosty; Mr. Massingham, and Mr. Hobhouse. I have also to thank two or three newspapers (out of several scores) for deliberately misrepresenting the character and contents of the book. By so doing they have confirmed the observations made on page 8 about politics and truth, for they are all papers notorious for putting party politics before everything, and there are things in the book which do not suit their politics.

By the criticisms I hope to profit; but they concern matters of opinion, of principle, of interpretation, rather than of fact, and are not of such a character as to necessitate rewriting any part of the book, though they tempt me to further discussion or explanation, which might run to more length than is desirable. Some of my critics have hinted at mistakes, but as they have not pointed them out or supplied me with corrections I am unable to put the alleged errors right, and am justified in concluding that they are not of a serious character.

So I let the text stand. But a good deal has happened since it was published, which substantially alters the situation. Several laws of first-rate importance have been passed in this country; great stir and change has taken place in regard to trade unions; and a quantity of new statistical information has become available. All this represents movement, and to know how things are moving is essential to a grasp of the situation. It seems to me, therefore, that the best way of embodying the new facts, or the more important of them, is to put them together at the end of the book. That at once supplies such correction as is necessary, and indicates the movements in progress.

One important correction of fact is supplied by the new statistical information; it concerns working-class rents in England and Germany, and is fully set out in the supplementary chapter.

Another correction can be most conveniently made here. Mr. Leslie W. Miller, Principal of the Pennsylvania Museum and School of Industrial Art at Philadelphia, to whom I was much indebted for valuable help in that city, and for pleasant intercourse afterwards, has kindly drawn my

attention to two errors in my account of the school over which he presides. It is mentioned on pages 259 and 642. In the first place I have given the name incorrectly. The proper title of the whole institution is "Pennsylvania Museum and School of Industrial Art," and it has two departments, called respectively "School of Applied Art," and "Philadelphia Textile School". The confusion of names on my part was due in some measure to the account of the institution given on page 133 of the Seventeenth Annual Report of the Commissioner of Labour in Trade and Technical Education, which is headed "Philadelphia Textile School and School of Industrial Art". In the second place, I have not done justice to the practical character of the school. Mr. Miller writes: "For better or for worse we in Philadelphia are doing, and have always done, the actual trade work, and have made it the corner-stone of our instruction in a sense and to an extent which the other schools not only do not approach, but which they distinctly disapprove and proclaim as foreign to their purpose". In 1905 "upwards of 2,700 lbs. of worsted and more than 2,000 lbs. of wool were spun in the school, and were consumed in regular trade channels outside, while upwards of 1,000 lbs. of yarn were used up within the school itself". In short, it is essentially a higher trade school of a particularly practical kind. I am glad to give as much prominence as possible to this correction.

In the Preface to the original edition is a statement concerning remarks made in conversation and quoted anonymously for reasons given; "but in every case the persons quoted are those who have the best right to speak on the subject". A reviewer, whose desire to disparage the book was obvious, took advantage of this to insinuate that my word could not be taken for it, and that the opinions might be worthless. He further conveyed the impression that the book consists mainly of such anonymous and therefore worthless opinions. There are perhaps fifteen sentences of the kind in a book of over 200,000 words, and I do not suppose the idea of doubting me has occurred to any honourable mind; but as the insinuation has been made I think it desirable to give a list of the persons whose opinions are so quoted. In this way I can vindicate my-

self—and perhaps add to the interest of the book—without violating the principle laid down. They are: Sir Andrew Noble, managing director of Armstrong, Whitworth & Co.; Mr. James Roberts, proprietor and manager of Sir Titus Salt & Co., Saltaire; Mr. Mitchell, late Superintendent of the British Westinghouse Electrical Company; Sir Swire Smith, of Keighley; a representative of Bell Brothers, of Middlesborough; a representative of the Birmingham Small Arms Co.; Mr. G. Ernst Peters, of Elberfeld; the Secretary of the Cotton Manufacturers' Association, of Blackburn; the Secretary of the Amalgamated Society of Engineers; the Secretary of the Sheffield Trades Council; the Secretary of the Bradford Trades Council; other trade union secretaries at Bolton and Oldham; the Secretary of the Operative Cotton Spinners' Union, at Fall River. The reader who can name a more authoritative list, representing employers and employed, is at liberty to cavil at the anonymous opinions quoted by me.

German readers who happen to come across this book may be glad to know that a German edition, under the title of *England, Deutschland, und Amerika*, was published by Carl Heymann of Berlin at the end of 1907. The publication was undertaken at the instance of Dr. Leo, head of the Labour Department of the Imperial Statistical Office; the excellent translation was made by Madame Leo, who has a perfect command of English, and edited by Dr. Leo. It has, I understand, met with much appreciation in Germany.

March, 1909.

PREFACE TO THE FIRST EDITION.

It seems desirable to explain that this book has no connection with what is called "the fiscal controversy," in England. It was planned, and the investigation on which it is based was carried out, before that controversy arose. It contains nothing about imports and exports, and the only reference to free trade is confined to a few paragraphs in the last chapter. But it was inspired by the same circumstances, namely, the growing pressure of international competition in industry, which is evidently going to be the warfare of the future. It essays to deal with the other side of that problem, and to examine the conditions under which industries are carried on in the three leading industrial countries,[1] apart from tariffs. My aim was to make a more systematic comparison than has yet been done. For that purpose it was obviously necessary to limit the field, because observation is essential to a real comparison, and at the same time to make it wide enough to afford a fair basis. I therefore took a certain number of industrial centres in each country. In selecting them I was guided by three objects—(1) that they should represent the two great branches of competing industries—textiles and metals, (2) that they should be as purely industrial, and (3) as nearly comparable as possible. I then proposed to study these selected centres in detail, noting the actual conditions of life on the spot, and starting from this basis of observation to compare the

[1] The name "America" stands for the United States. This usage seems to me both legitimate and necessary; it has long been allowed by general consent in regard to the adjective, and objection to the substantive is pedantic.

principal factors *seriatim*, using statistics and other records to complete my comparison.

That plan has been carried out exactly as intended, except that domestic affairs compelled me to curtail a portion of the time allotted to Germany. In spite of that I do not think that my German friends will have any reason to complain of their treatment. The selection will probably be criticised; no one can criticise it more effectively than I could myself. Indeed, I feel very sorry for some of the omissions. One of those is Berlin, because Berlin is not only one of the greatest of manufacturing cities but a particularly modern one with some of the largest and most perfect works in existence, which can be said neither of London nor of New York. But I have left out all the capitals for detailed study, because in them the industrial element is over-laid and obscured by so many others of a special character that they rather confuse than enlighten. So I have merely taken brief note of them. Then it has cost me a severe pang to give up Scotland. The Scottish element, though relatively small in quantity is great in quality; the Scots make their mark wherever they go. And Glasgow, with Paisley, Partick, Clydebank, Rutherglen and other satellites, is perhaps the greatest of all manufacturing centres; but it is still more a great port and trading place, and these characters introduce entirely different conditions, as I subsequently point out. It is a serious mistake to confound trading with industrial places, and I have eschewed all ports, except Philadelphia, where that element is quite secondary. Moreover, to have included Scotland would have greatly complicated my task in dealing with statistics and several special subjects. The same reasons apply to Belfast. I am acquainted with these and with many other important places omitted in all three countries; and looking strictly to the objects I had in view I abide by my selection as fairly and sufficiently representative. I beg readers to remember that my purpose was not to enumerate totals, but to compare conditions in detail, and those not of the whole but of the manufacturing population.

It has been a very laborious task, in which I have to acknowledge with gratitude the help of hundreds of people,

from the British Ambassadors in Berlin and Washington to ordinary workmen. Government and municipal officials, factory and school inspectors, manufacturers, managers, engineers, chambers of commerce, teachers, health officers, statisticians, police, clergymen, journalists, trade union officials, librarians, private gentlemen, workmen and their wives, have all given me information without stint. In quoting remarks made in conversation I have not mentioned names, because it is a poor return for confidence to lay a man open to the chance of a troublesome correspondence; but in every case the persons quoted are those who have the best right to speak on the subject.

The first and last chapters are of a summary character. Chapters II., III., and IV. are devoted to the selected districts and towns; besides detailed descriptions they contain historical notes on the rise and development of the local industries, which I hope may be found interesting. The natural conditions are an important factor which is often ignored. In the descriptive part I have followed a general plan and have noted certain points in each case so far as information allowed, but I have not attempted a rigidly symmetrical treatment, and have discussed special subjects such as infantile mortality, water-borne disease, markets, street paving and so on as they came up conveniently for notice in connection with some particular place. The remaining chapters deal more comprehensively with the most important conditions, which may be grouped in three divisions—(1) the factory (laws, premises, hours, wages, compensation for injury, benevolent institutions); (2) the home (housing, cost of living, social conditions, including games, theatres, gambling, drink, culture, locomotion, etc.); (3) miscellaneous (trade unions, pauperism and thrift, education). The most unsatisfactory subjects are wages and hours; both are very complicated and adequate information is lacking, so that only broad conclusions can be drawn.

Apart from official reports and statistics I have drawn very little upon other writers, not from any want of respect, but because I had no room either for repetition or for controversy. I have indeed been obliged to omit much of my own matter, including two long chapters on

"physical deterioration" and vital statistics; and though the book contains a great deal of detail very much more has been omitted. My aim has been to condense the material, which is enormous, and to focus it upon the main question.

A large part of the matter relating to Germany was published in *The Times* in the autumn of 1903, and I find it necessary to draw attention to the fact because in books and other publications that have appeared since then I have seen not only facts and ideas taken from those articles but also entire paragraphs reproduced word for word and presented as original.

I trust that readers, and particularly German readers, will note that this is essentially an objective and comparative study. Principles are discussed to a certain extent on some points, but only so far as to form a standard of comparison. If I were to discuss wages, housing or education, for instance, from an abstract point of view I should treat them differently. It follows that the advocacy of "reforms" is no part of my purpose here. For my own part I find it a more than sufficient task to ascertain a few facts with approximate accuracy and to gain a little insight into cause and effect. I have sometimes thought that something of the kind might, perhaps, be a useful preliminary to reforms; but that view has never been popular and I do not press it.

With regard to errors, I have spared no pains to avoid them, but there must be many in so large a mass of detail and I have had no help in revision. Corrections will be gratefully received.

In conclusion I feel constrained to apologise for the word "Efficiency," which has acquired unfortunate associations since this book was begun. It savours too much of the platform and political clap-trap, but I could find no better.

December, 1905.

CONTENTS.

CHAPTER I.

General Comparisons and National Qualities.

England and Germany alike and comparable—Not so the United States—Its heterogeneous population, soil, climate and laws—Generalisation difficult—Nevertheless a nation with national qualities—Frankness of intercourse—German formality—English suspiciousness—Its drawbacks—American trickiness not a national quality—Mr. Roosevelt—American corruption—Compared with German and English public life—The White House—German thoroughness—American hurry—Race for wealth—American quickness mental not physical—Practice of wasting time—Want of thoroughness and finish—Slovenliness—English intermediate, less methodical than Germans, less alert than Americans—Their advantages—Energy not lost but diverted—American emulation—English grumbling—American advertising—Toleration of shams—Lawlessness—Demand for information in Germany and America—Domestic life—Position of women—American submissiveness—Americanisation of immigrants . . . *Pages* 1-38

CHAPTER II.

Industrial Districts in England.

Distribution of industries—Causes—Their combination in the north of England—Lancashire and Yorkshire—Aggregation and growth of towns—London—Manchester—More commercial than industrial—Its history—The great industrial inventions—The cotton industry—Lancashire machinery—Manchester described—Bolton—Its history—Cotton spinning—The mills—The spinners—Earnings—Housing—Standard of comfort—The men and the football field—The women and the market—The town—Statistics—Oldham—The pure industrial

type—The great spinning centre—Machinery works—High standard of comfort—Theatres—The town—Housing—Statistics—BLACKBURN Weaving head-quarters—The town—Infantile mortality—Statistics—THE WEST RIDING OF YORKSHIRE—The wool industry—BRADFORD—Native vigour—Its history—The combing machine—Opposition to machinery—Alpaca and mohair—The town—Housing—The great mills—Earnings—The Technical College—Music—Statistics—SHEFFIELD—The great metal town—Its history—Cutlery—Electro-plate—Steel—The town—Housing—Smoke—Working conditions—The hydraulic press—Wages—The Cutlers' Company Statistics—LEEDS—HALIFAX—HUDDERSFIELD—MIDDLESBOROUGH—SOUTH STAFFORDSHIRE—The Black Country—WOLVERHAMPTON, WALSALL and other towns—The industries—The district—Popular indifference to ugliness and squalor—Vitality in the Black Country—Wages—The lock and key trade—Other manufactures—Housing—Statistics *Pages* 39-126

CHAPTER III.

INDUSTRIAL DISTRICTS IN GERMANY.

Distribution of industries—BERLIN—THE RHINE PROVINCE—DÜSSELDORF—The town—Engineering works—The Exhibition of 1902—Housing—Traffic—Municipal enterprise—Education—Statistics—ESSEN—Its history—The Krupps—Story of the works—Comparison with Sheffield—The workmen's colonies—The town—The Krupp workshops—Crucible steel-casting—German churches—Education—Statistics—ELBERFELD and BARMEN—The true industrial type—Their history—The hanging railway—The towns—Municipal activity—The Barmen Textile School—Housing—Healthiness—Surroundings—Sects—The poor-law system—Industries—The great haberdashery centre—River pollution—Smoke—Statistics—CREFELD—Its peculiarity—The silk centre—Its history—The Textile School—The birth-rate—Housing—The silk trade—The mills—Statistics MÜNCHEN-GLADBACH—The cotton centre—Its history—The Textile School—English machinery—Housing—Public baths—The "Christian" trade unions—Statistics—SOLINGEN—The Berg country—The small iron industries—Cutlery—History of the trade—Factory conditions Labour organisation—Housing—Statistics—AACHEN—The town—Industries—The Textile School—Statistics—DORTMUND—The Rhine Westphalian iron towns The town—Statistics—BOCHUM—HAGEN—Comparison of vital statistics in English and German iron towns SAXONY—Its industries—Density of population—CHEMNITZ—Compared with Manchester—Its history—The town—Cotton—Machinery—Sächsische Maschinen Fabrik—Richard Hartmann—Hosiery Weaving—GLAUCHAU—MEERANE—ZWICKAU—PLAUEN—FREIBERG—BAUTZEN—MEISSEN—Housing—Infantile mortality—Education—Suicide—Vital statistics, etc. . . . . *Pages* 127-197

CHAPTER IV

Industrial Districts in America.

Distribution of industries—Movement westward—The chief industrial States—Conditions and development different from European—Natural advantages—Massachusetts—Its industries—Boston—Its commercial character—The town—Foreign population—The cotton towns of Massachusetts—Types of American towns—Their development—Wooden houses—Fall River—The town—The cotton mills—Wages—Housing—Public health—Typhoid fever—Oysters in America—Foreign population—School—Locomotion—Statistics—Lowell—Its industries—Foreign population—A strike procession—Wages—Arbitration proceedings—A carpet mill—The town—Housing—Water supply in American cities—The Textile School—Statistics—Drunkenness Lawrence—Industries—Statistics—New Bedford—Cotton mills—English workmen and machinery—Wages—American streets—Statistics—Worcester—Its industries—An intellectual centre—Foreign population—Statistics—Rhode Island—Industrial activity—Foreign population—Industries—Providence—The town—Industries—A noteworthy factory—Foreign population—Low vitality of native stock—Infantile mortality—Statistics—New York City—Foreign population—The town—Slovenliness—Pronunciation—Locomotion—The harbour—Housing—The death-rate—Pennsylvania—A great manufacturing State—Its situation and resources—The iron and steel industry—Textiles—Industrial centres—Philadelphia—Its history—The town—Street lighting in America—Shops—Housing—Coloured population—Foreign population—Industries—Metals—Textiles—Carpets—English weavers—Statistics of industries—Technical schools—Library—Water supply—Statistics—Pittsburg—The gateway of the West—The district—The town—Smoke—Homestead—The steel works—Wilmerding—The Westinghouse works—McKeesport—Foreign population of Pittsburg—Housing—Statistics—Ohio—Illinois—The Southern States—The cotton industry—South Carolina—The cotton mills—Child labour—The mill hands—Wages—Cost of living—Pelzer—Cotton products—Railway rates—Statistics of the cotton industry . . . . . *Pages* 198-282

CHAPTER V.

Factory Laws.

Basis of factory legislation—Its origin—The protection of children—The factory "system"—Gradual evolution of factory laws—Health and safety the main objects—Economic bearing—English laws—Protected persons—General provisions—Special rules for dangerous trades—Payment of wages—Inspection—Penalties—German laws—Protected persons—General regulations—Dangerous trades—Inspection—Penalties—Comparison of English and German codes—American laws—Diversity in different States—Massachusetts—Protected persons—General provisions—Pennsylvania—South Carolina—Other States—Legality of regulating hours for adults—Age limit for children in different States—Observance of laws—Summary conclusion
Pages 283-320

CHAPTER VI.

Factory Conditions.

Premises—General comparison—Air—Warmth—Light—Safety—Dust—Sanitary provisions—Other appointments—Order—Plant—Alleged backwardness of English manufacturers—The cotton trade—Superiority of English machinery—Other textile machinery—Equipment in metal trades—Opinions of the "Moseley Commission"—Lessons learnt by English manufacturers—Energetic action—"Scrapping"—Encouragement of workmen—British and American inventiveness—Patent laws—German equipment—Speed of running compared—Effects of machinery . . . . . *Pages* 321-347

CHAPTER VII.

Hours.

Wide variations make averages unsafe—Hours in England—Textile, engineering, ship-building, small metal and other industries—"Cribbing" time—Germany—Hours not so long as stated—Details from representative factories—Returns by trade unions—Summary comparison with England—Meal intervals—Hours of opening and closing—United States—Great variations—Details from census—Reduction of hours in recent years—Official details for Massachusetts—For United States—Overtime—Summary comparison—Statutory eight hours day in State and municipal employment—Holidays—Economic bearing of hours—Do men work harder in America?—Opinions of "Moseley Commission"—"Hustling"—Opinions of English workmen in America—Quantity and quality of output—The problem for each country . . . . . *Pages* 348-375

CHAPTER VIII.

Wages.

Difficulty of the subject—Comparative wages of unskilled day labourer—The alkali industry—Board of Trade returns—Engineers—Returns by U.S. Bureau of Labour—Cotton weavers—Woollen weavers—Summary comparison—Economics of wages—Excess and deficiency—the "living wage"—Adequate wages a good investment—Cutting down of wages—Too high wages—Spoiling of workmen—Differentiation necessary—English manufacturers' opinion, "pay them better"—The adjusted incentive—Time wages—Piece wages—Cutting prices—Other objections—Shirking—Intensive rates—The Oldham speed list—Intensive principle in time rates—Profit sharing—Its real character—A completion of wages—"Commercialisation" of labour—The most effective method of remuneration—Application in the three countries

Pages 376-402

CHAPTER IX.

Workmen's Compensation and Insurance.

German State insurance—Sickness—Accident—Infirmity—Effects—Social democracy and workmen—Sanatoria for consumption—English Workmen's Compensation Act—Anthrax an accident—Private schemes—Compensation payable—Comparison with German provision—Working of the Act—Insurance—Grievances of workmen—Employers' liability in the United States—Voluntary compensation *Pages* 403-422

CHAPTER X.

Benevolent Institutions.

Model settlements not a "solution of the labour question"—Labour demands justice, not favours—Opposition of trade unions—Consequently less paternalism in England—More common in Germany—Instance of D. Peters & Co.—Welfare institutions described—Conditions of success—Saltaire—Essen—Pelzer—Hopedale—Ludlow—Labour organisation, labour legislation and municipal activity all inimical to benevolent institutions . . . . *Pages* 423-433

CHAPTER XI.

Housing.

Causes of interest in housing—Rent compared—House density—Superiority of English conditions—Overcrowding or room-density—Diminution in England—Less overcrowding in America—Conditions in Berlin—Barmen—Essen—Düsseldorf—"House famine" in Germany—Urbanisation—System of tenure—Quality of housing—Slums—German homes well kept—American slums—Summary comparison—House ownership—Housing agencies—The "speculative" builder—Building societies—Various agencies in Germany . . . *Pages* 434-465

CHAPTER XII.

Cost of Living and Physical Conditions.

Classification of items of expenditure—Rent—Food—Comparison of prices—Official figures criticised—Meat—Bread—Vegetables—Fruit—Sugar—Fish—General conclusion as to cost of food—Markets and co-operative stores—Expenditure on food—Comparison between United Kingdom and United States—Alleged insufficient feeding in England—Comparison with Germany—Fuel and lighting—Clothing—Taxes—Locomotion—Other items—Summary conclusion as to cost of living—

Physical conditions—"Physical deterioration" in England—"Degeneration"—Committee of inquiry—Impressions of comparative physique English and Germans compared—Causes of German superior standard . . . . . *Pages* 466-488

CHAPTER XIII.

Social Conditions.

Games—Recent development in England—Football—Its commercialisation—Professional players—Popular interest—Cricket—Importance attached to it in schools—Author's experience—Less popular than football—Golf—Athletic sports—Games in Germany—In United States—Baseball—Less devotion to games than in England—Influence of games—Looking on—Loafers—Excessive preoccupation of all classes in England—Theatres—Statistics—Great increase in England and America—Especially among industrial population—Theatres in Germany—Municipal theatres—Melodrama and musical comedy—Music halls—Concerts—Betting and gambling—Increase in England—Bookmakers—Motives of betting—Lotteries in Germany—Betting and gambling in America—Cards—Drink—Its importance—Public-houses in Germany—In America—Evasion of the law—Public-houses in England—Clubs—Drunkenness—In America—In Germany—Diminution in England—Culture—Free libraries—Comparative statistics—Literature read—Readers—Newspapers—Comparative statistics—Quality and influence—Locomotion—Electric trams—Railways—Municipal administration . . . . . *Pages* 489-532

CHAPTER XIV.

Trade Unions and Industrial Disputes.

Modern labour organisation a corollary of the "factory system"—The latter chiefly created by workmen—Trade unions the response of the rest—Difficulty of organisation—Reluctance of men to combine—Need of trade unions Organisation more advanced in England than elsewhere—Numbers—Constitution of unions—Legal position—Funds and payments—Special account of German unions—Social Democratic—"Christian"—Hirsch-Duncker—Independent—Influence of trade unions—A source of industrial strength to England—Friendly attitude of employers—Charges against trade unions—Not responsible for restriction of output and opposition to machinery—Laziness—Interference with management—Jealousy between unions—Interference with free labour—Organisation of free labour—Charge of fomenting disputes—Difficult position of union leaders—Beneficial influence of unions—Educative influence—Non-unionists—Effect of unions on conditions of labour—On relations between employers and employed—Consequent diminution of disputes—Comparison with United States and Germany Interests of labour and capital not identical—Permanent advance towards stable relations in England—Trade unions learning discipline—The future . . . . . *Pages* 533-568

CHAPTER XV.

Pauperism and Thrift.

Statistical data of pauperism not comparable—Problems the same in each country—The English poor-law—The scheme adopted in 1834—Its recent break-down—Out-door relief and discrimination—Increase of unemployment—American poor-law based on English—Confusion in methods—German poor-law—More discrimination applied—Papers of identification—Distinctive treatment of voluntary and involuntary destitution—The Elberfeld system of out-door relief—Tramps and beggars—Labour colonies—Labour registries—German treatment of pauperism more scientific—Thrift—Statistical comparison impossible—Savings' banks—Total savings in United Kingdom—Thrift and wastefulness in England—In Germany—In America—Extravagance of American women . . . . . *Pages* 569-588

CHAPTER XVI.

Elementary Education.

Fundamental difference between public and private education—Germany and the United States have long had the former, England only now—Aim of national education—The American democratic principle, "equality of opportunity"—How far realised—Educational provision in United States—Educational aims—No uniformity of methods—Varying laws—School age—The school year—Prevailing type of administration—Teaching staff—Salaries—Training of teachers—Co-education and other details—Results—Defects—Ethical results—Uneasiness among thoughtful Americans—Germany—System based on different principles—Class distinctions—A State system—Its organisation—Aim defined—The teaching of religion—Contrast with United States—Other subjects—Teaching staff—Salaries—Official standing of teachers—Other details—Statistics—Continuation schools—Military service—Results—England—Recent history of education—Development of the system—Unsatisfactory results—Defects of the system—Teachers—Salaries—The Act of 1902—New system—Aims defined—The religious difficulty—Warning from the examples of Germany and the United States . . . . . *Pages* 589-623

CHAPTER XVII.

Technical Education.

Meaning of the term—Confused state of the subject—Germany—The secondary schools—Official character of the organisation—Technical schools—Classification—Lower group—Middle group—Higher group (*technische Hochschule*)—Their functions—Train officers not workmen—England—Technical schools supply industries from below—Chiefly evening classes Schools more diffused and less specialised than in Germany—Comparison—Merits of English schools—English univer-

sities or technical high schools—Chief difference lies in students—Demand for highly educated experts only beginning in England—Designing—General comparison—United States—More like German than English system—Supply from above—Higher schools—Middle—Lower—Uneven distribution—Influence on industries—Defects—Summary comparison of salient educational results . *Pages* 624-646

CHAPTER XVIII.

Conclusion.

Recapitulation—England caught up industrially and outstripped—Causes—Germany and United States have two things in common—Hard work and a protective tariff—Nature and object of tariffs—Their effect on industries—Inadequate without work—American and German methods of work—England a composite but faded picture of both—General slackness and love of amusement—Opinions quoted "A German Resident"—John T. Taylor (American)—E. O. (Russian)—"An Old Mechanic of the Old School"—"Vidi" in *The Times*—Work is efficiency—Other nations have outstripped England by working harder—The cause, over-prosperity and the diffusion of wealth—The Gospel of Ease—"Progress"—Other nations the same under same conditions—Those conditions coming to an end—Physical energy retained—Response to pressure of necessity—Manufacturers, workmen and others—Pressure of pauperism and unemployment—Protection and the future—National vitality . . . . *Pages* 647-665

SUPPLEMENTARY CHAPTER.

Factory laws and conditions—Activity of English manufacturers—Machine tools—High speed steel—Boot machinery—Wages and hours of labour—Board of Trade inquiry—Comparison of English and German wages—American wages—Comparison of hours—Workmen's Compensation Act of 1906—Old Age Pensions Act of 1908—Housing—Comparison of English and German rents—Cost of living—Comparative tables—Rise in the United States—Trade unions—Great increase in Germany—Trade Disputes Act of 1906—Industrial unrest—Conciliation—Trade unions and socialism—Legal decisions in the United States—Statistics of strikes—Conclusion . *Pages* 666-701

INDEX . . . . . *Pages* 703-720

CHAPTER I.

GENERAL COMPARISONS AND NATIONAL QUALITIES.

It is possible to draw a valid parallel in considerable detail between Germany and England or Great Britain. Both are homogeneous countries with homogeneous institutions, although minor variations in character, customs and laws may be found in different parts; both are long settled, filled up, and possess old-established usages and traditions. Both, it is true, include some racial elements not wholly fused, but for all practical purposes the human material you have to deal with in Germany is German and in England it is English. And those terms connote distinctive national qualities, which assert themselves everywhere in some degree. Consequently comparisons can safely be drawn, not only in general, but in particular, if judicious allowance be made for circumstances. Further, a good deal of material for making them (though less than could be wished) is available in systematic records and statistics, which may be used to complete or correct the limited and defective conclusions derived from personal impressions.

It is not possible to draw a parallel in the same way between either country and the United States. The latter is new, partly developed and untrammelled by traditions. It is not a homogeneous country, but a medley of peoples nations, languages, creeds and climates, having in daily life little in common but the mail, the currency and the tariff. The British Empire itself hardly comprises a more heterogeneous racial assortment than is to be found within the confines of continental U.S.A.; it has the white man, the black, the red, the yellow and the hybrid; the yellow includes most kinds of Asiatics and the white every kind

of European. More than one-eighth of the population is foreign born, considerably more than one-fourth is of pure foreign parentage and more than one-third is of pure or half-foreign parentage.[1] In the industrial sphere this racial mixture is greatly accentuated. Of persons engaged in "manufacturing and mechanical pursuits" considerably more than one-half (56·2 per cent.) are of "foreign parentage," and more than one-third (35·1 per cent.) are actually foreign born.[2] Soil and climate are not less varied than the population; and though laws and social conditions possess more homogeneity than race and climate, they yet exhibit discrepancies so large and numerous as to make generalisations exceedingly difficult. How, for instance, are we to speak in general terms, as many have done lately, of "American education" or "education in America" when there are fourteen States which have no compulsory education,[3] and eight which contain from 95,000 to 175,000 native whites over ten years of age unable to read and write; whereas in others school attendance is compulsory for seven or eight years, and illiteracy is reduced to a very low point? What are we to make of such discrepancies as the variation of the school year in different States from seventy-six to 191 days and of the expenditure per pupil from less than four to more than forty dollars? Factory conditions present similar difficulties. Are those who speak of "American factory laws" aware that some important manufacturing States have no factory regulations at all and that no two States have the same laws?

Or, again, "the American workman". Who is meant by this expression—the "poor white" in a South Carolina cotton mill, who really is an American workman, or the New York bricklayer who may be one but probably is not, or the unskilled French-Canadian or Greek in a New England factory, the still more unskilled Slovak at Pittsburg, the highly-skilled Yorkshireman or German at Philadelphia, or the Italian navvy everywhere? To include all these and

[1] The precise figures are: Foreign born, 13·7 per cent.; both parents foreign, 27·6 per cent.; one parent foreign, 6·7 per cent.; partly or wholly of foreign parentage, 34·3 per cent. (Twelfth Census, U.S.A.). I shall give further details in dealing with particular localities.

[2] Twelfth Census, U.S.A., Special Reports: Occupations.

[3] *Annual Report of the Commissioner of Education*, 1902. Washington.

a vast number of others, whose circumstances, character and capacity are as diverse as their origin, under the term "American workmen" and to average their condition is absurd. How absurd will be understood when the reader learns that the weekly earnings of cotton spinners in America may vary from 7s. to £4 or £5, and the weekly rent of a room in different industrial centres ranges from 6d. to 6s., or more.

It must be admitted that such discrepancies as these, which might be multiplied indefinitely, make generalisations and averages very unsafe. The truth is that the United States is too vast and varied and complex to be reckoned up in the same way as older and smaller countries. For the purposes of any serious examination it must first be divided into sections, each consisting of a group of States having fairly homogeneous, natural, social and economical features. Then selected areas or communities can be examined as representative of a section but no more; and in each case regard must be had to the racial composition of the population.

And even this investigation is difficult and unsatisfactory, partly owing to the absence of some of those records which are available in older countries,[1] and partly to the wide spaces and great extent of the land, which makes a thorough survey hardly possible within a reasonable limit of time. The student is placed at a disadvantage; he cannot see everything and may miss things of importance. He must visit representative centres and travel rapidly over great distances to reach them; of what lies on the road he can learn little. In what he does see the stranger has the advantage over the resident. This holds good of every country, and is the reason why the impressions of an observant stranger are so interesting. His mind is a sensitive plate, ready to receive and record impressions; as they are repeated and multiplied, definiteness of outline is gradually lost, the plate becomes a jumble of blurred images and ends by being able to receive no impressions at all. We do not even see the most familiar things in our daily life, yet

[1] I refer particularly to vital statistics, which are very defective in the United States. On the other hand, some statistics are much more complete there; notably the Census, which is unique.

they have the greatest significance and are vivid to the eye of the stranger.

On the other hand, a whole field is almost closed to him —the home life. He either has no opportunity of seeing it at all, which is the usual lot of travellers, or he sees it through the rosy lens of hospitality. If travellers' impressions of any country, recorded by competent and dispassionate observers, are carefully studied, they will be found to go wrong most often in those matters which involve a knowledge of home life.

The astute reader will perceive that I am apologising in advance, and, indeed, I feel conscious of the difficulties of my task, and particularly in regard to the United States, for the reasons given. Nevertheless the candid inquirer may gather much positive information even in that bewildering expanse of life, and may focus it into perspective to form a picture of some sort, defective, no doubt, but neither vague nor distorted.

In spite of the racial mixture, the heterogeneous laws and the diversified physical conditions, the United States is a nation, and its citizens possess some very distinct national qualities which form an interesting contrast to those of the European peoples with whom I am comparing them. Some of these characteristics have a particular bearing on industrial efficiency; others are of wider application but are yet worth noting in that connection.

One which has made a very great impression on my own mind, and, I believe, on other Englishmen, though its significance may not strike other travellers in the same way, is the frank, direct and straightforward intercourse between man and man. To the stranger it takes the form of an easy, genial and confident reception. I met with the same experience everywhere, and therefore feel justified in regarding it as generally characteristic of American life. It struck me particularly, because I was incessantly engaged in gathering information from all sorts of people, and had just spent several months doing exactly the same thing in England and Germany. I have nothing to complain of in those countries. On the contrary, I met with the greatest kindness and courtesy, but in the States the attitude is different. It is not politeness, but a simple directness, often

rather blunt than polite, though friendly. The man to whom you address yourself is not much concerned about your identity, nor does he need an introduction; he appears to rely on his judgment and form his own opinion. He has perfect confidence in himself, and is therefore ready to place confidence in others; he does not stand off; he is candid and open and he expects the stranger to be so too. The same quality is, of course, met with elsewhere in individuals. In Germany I have on several occasions presented myself at a public office or a manufacturer's works without any credentials, and have been told and shown everything I wanted to know or see. But that is not the rule Germany is a formal country, and formalities have generally to be observed. It derives from the Court, I imagine. The higher the social scale the more formal the procedure. In Government circles it becomes terrific. There credentials are absolutely indispensable, and in general they are advisable. In the United States I began in the same way with the regular formalities, and carried official credentials, but soon found them unnecessary. England in this respect, as in so many others, stands midway. There is more formality than in America, less than in Germany; but instead of formality there is something much worse, and that is suspicion. In England, and particularly in the industrial north, I regret to say, the air is commonly as thick with suspicion as with smoke. There is suspicion, deep and abiding, between employers and employed; there is a standing veil of suspicion between one manufacturer or man of business and his neighbour;[1] and there is a peculiar attitude towards the stranger. It seems to be assumed that any one who has not previously enjoyed the advantage of acquaintance with that particular north-countryman is probably a rogue, and, if not that, almost certainly a fool. Yorkshire is the special home of this amiable frame of mind, and, being a Yorkshireman myself, I am free to say so, though I love my county and know the fine qualities concealed beneath that discomfortable exterior.[2] There

[1] I know a man who will not allow any one, not his brother or his oldest friend or the Prince of Wales, to enter his works.

[2] An amusing instance of the Yorkshire hardness and disbelief in good intentions occurred in my native place. A cottager's daughter was ill, and

are, of course, exceptions; I have met with men of the finest and most open nature in the industrial world at home. And the unexpansive stand-off character has another side. An Englishman, if he does require a personal introduction, is more bound by it than any one else. He is reserved and chary of friendship, as of speech, because it means more to him. A man stands sponsor for the stranger whom he introduces to his friends; such an introduction admits within the inner circle on a friendly footing and secures the stranger the finest, because the most genuine, reception in the world. Neither in Germany nor in America does an introduction carry the same significance. It is either purely formal or quite casual.

Speaking generally, however, an over-suspicious habit of mind is common among English manufacturers and men of business. An American gentleman, the head of a very large concern in the north of England, told me how strange and uncomfortable he found this atmosphere. Not only were his English workmen invincibly suspicious, but he felt the same barrier when doing business with his neighbours. "I don't know how it is," he said, "but I can't get them to do business straightforwardly. They seem to think I am always trying to do them and they mean to do me first." No one who knows that part of England will be disposed to deny the accuracy of the diagnosis. It is impossible to regard this frame of mind as a sign of strength. The over-suspicious man prides himself on his shrewdness, but that is part of his stupidity. Like St. Paul, he glories in the things that concern his infirmity, for habitual distrust is a sign of weakness. There is no fool like a very shrewd one. I met with one in America and one in Germany, and I am afraid it is not a mere coincidence that the first had lived many years in England and the second called himself half an Englishman. And yet suspiciousness can hardly be called a characteristic English quality, though it undoubtedly is a Celtic one. John Bull is not a very cautious person; his bitterest enemies would not give him that character in general. But he is secretive, and this turns

my mother sent her to the seaside. Her parents could not understand it. "Ah thowt an' Ah thowt an' Ah thowt, an' Ah *couldn't* think what good it would do Mrs. Shadwell to send our Annie to Scarborough."

into suspiciousness in certain circumstances. Directly he touches business he thinks that every one has a dark design upon his pocket. Perhaps it is the result of experience, but the same weakness shows itself in other directions, and if any one challenges this opinion I shall take refuge behind a good authority. "Our hospitals," said *The Times* in a leading article, 20th December, 1904, "probably suffer from that secretiveness which is a national failing. People cannot be got to co-operate in this country, because each is jealous of his neighbour knowing how he conducts his affairs."

Whatever its origin may be, the habit of distrust is both a sign and a source of weakness in industrial matters. It means friction all round. The standing objection of workmen to innovations and improvements is rooted in it, and a very large proportion of the disputes between labour and capital can be traced to nothing but mutual mistrust. The same weakness has begun to show itself in America. The only thing I found employers suspicious about was the organisation of labour. Many will not allow any one connected with trade unions to come near their works, and they are beginning to scrutinise every stranger, though half apologetically, lest haply he may be a "walking delegate" in disguise. This fear is a confession of weakness. Social democracy is the object of similar suspicion and dread in Germany. In this important respect, therefore, English employers do not stand alone; in fact the spirit of mistrust is rather diminishing between labour and capital in England, while it is increasing in America and Germany. It would have increased much more rapidly in the former but for the free and frank intercourse between employers and employed which still prevails in conformity with the national habit. This has been a more formidable barrier to the progress of trade organisation than diversity of language among the workpeople. When the "help" is on such easy terms with the "boss" the function of the organiser does not appear to be needed. Freedom of intercourse is in other respects undoubtedly an advantage. It facilitates and expedites the transaction of business in every way. In America men go direct to the point; they do not beat about the bush. But more than that. There seems to me

to be something great at the back of it—a consciousness of strength, of rectitude and good-will. A man is willing to believe well of another because he means well himself to others and fears no man. It is the fine flower of democracy, that stately seeming tree which yet bears so many ugly and poisonous blossoms; and perhaps that which it implies will be enough to carry the vast Republic through the grave evils which are springing up and threatening to choke its healthy life.

It may be thought that this quality is inconsistent with the reputation for trickiness commonly attributed to Americans, but I am convinced that whatever may be the sins of individuals or even of some sections of them, that reputation is misapplied to the American people. It has a certain foundation. There are rogues, of course, and in them the national bent for ingenious devices develops into exceptionally artful forms of swindling. Of course, too, foreign countries get the benefit of their talents, for persons of this class find it desirable to seek fresh fields from time to time. That is a general law, and every country where there is any harvest to be made receives the attentions of those of its neighbours' sons and daughters who need change of air and have to leave their country for their country's good. Wherever they go they give it a bad reputation, which the innocent have to bear. It may be that American rogues are more unscrupulous as well as more artful than most others, though it would be very difficult to sustain that charge in the face of European revelations; it may be that rogues are more numerous in America than elsewhere, and, perhaps, that is more likely. They are, undoubtedly, more audacious and unblushing. Nevertheless I am certain that the national character is the reverse of tricky, and I venture to think that the Presidential election of 1904 bears me out. I am going to say nothing about politics; I hate them with all my heart, for at the sound of political strife Truth turns away her head and veils her face, and I suppose that is quite as true in general of American politics as of others. But the election was not a triumph of politics. That is the very thing which makes it so remarkable; it was rather a revolt against politics. All the people who understand such matters were out of their

reckoning and taken by surprise. The result was universally attributed to Mr. Roosevelt's personality. And what is that personality? Of the millions who voted for him comparatively few can know him personally; they know him by his public words and acts. I speak with great diffidence and under correction as a stranger who does not profess to know anything of the ins and outs of the matter, but a stranger can look on at a public event of world-wide importance and form a more or less intelligent opinion about it. In that capacity I formed an opinion of Mr. Roosevelt from his public words and acts, as the large American public has done. And having also formed an opinion of the large American public I was not at all surprised at the election. For it seemed to me that Mr. Roosevelt is a typical American in those very qualities which I venture to call national—in directness, straightforwardness, rectitude of purpose and plain dealing—in all that is the reverse of trickery. And I believe that is the main cause of his unprecedented majority. The Americans like that type of man because it is American; it embodies those qualities which are the quintessence of the pure democratic ideal; and perhaps it appealed to them with particular force, because that fine, fearless, national confidence which is so pleasant to see and so potent for good, is being sapped by greed and the scramble for money and is giving place to mistrust. The worsening relations of capital and labour are only one sign among many. The corruption in local public life, which is rooted in the same passions, cannot but increase it.

I do not intend to say much about this ugly topic because I have made no personal study of it and it has only an indirect bearing on my subject, but an Englishman cannot travel in America without being impressed by it. We hear very little in Europe about American local affairs except those of New York and have no idea of the pervasive corruption. Tammany, of course, is a household word; it stands for something vaguely bad but what or how nobody really knows. It seems to be beyond the reach of mere European understandings, if, indeed, anybody understands it in New York, which I doubt. I have several times asked Americans to explain it, but after two sen-

tences those present always began to contradict each other and never got any further. But, so far as I can learn, Tammany is clean compared with doings in St. Louis, Philadelphia, and elsewhere. What surprised me, however, was to find some scandals of the sort going on wherever I went. I do not mean gossip, but things proved in court and freely admitted. Englishmen are not in a position to throw many stones about it. Here, again, we stand midway between Germany and the States. In the former, local public life is, in general, very clean both personally and politically; the system is entirely different, much less dependent on popular election, and affairs are conducted with a single eye to the public welfare. In England we have clean administrations too. The weakness is more often political than financial. That is to say, the public welfare is not sacrificed to enrich individuals, although enormous sums might be made; but it is sometimes sacrificed to benefit classes who have votes, or to push causes which are assumed by those who hold the reins to be identical with public interests and are made ends in themselves. London is a case in point. Some of our large provincial towns are still better administered, but in others the same kind of tampering with the strict discharge of public duties goes on from ostensibly lofty motives and is landing them in financial difficulties. In others, again—chiefly the smaller ones—corruption of a worse kind is common. It is not so much a matter of actual bribes or "boodle," as in America, though that occurs too, but a secret and underhand sort of corruption, which is in some ways worse. Men get themselves elected for the express purpose of preventing things from being done that ought to be done. The chairman of the Sanitary Committee, for instance, is often an owner of insanitary property, and he takes very good care that no inconvenient reforms are carried out. In other cases the place is run by a gang—owners of house property, builders, surveyors, house agents, and so forth—for their own benefit. This sort of thing is seldom exposed, especially if the precaution is taken to have the local papers in the swim. I know instances of all these things, and therefore I cannot hold up my hands in horror at American corruption; but I confess that its general prevalence and

barefaced audacity staggered me. It takes forms of astonishing meanness. Such is the demanding of bribes by members of a school board from persons applying for the post of teacher, one of the worst paid callings in the country. It seems that so long as there are men who prefer money to duty and honour, corruption is inseparable from democracy in large communities; and the more democratic they are the greater the corruption. The scum comes to the top. Pushing men make a business of getting elected for their own ends; disinterested and high-minded citizens shrink from descending into the squalid arena thus created and retire from participation in public life. If not, they touch pitch and are defiled. In great issues, however, the people still break through the meshes of intrigue, and in the presidential election we see a fine national ideal triumphing over the crookedness of politics. It is a cheering augury. The greatest thing in the States is the White House. Every man must take off his hat to that unique building, more distinguished than the stateliest royal palace, like the historical undecorated statesman among his beribboned colleagues. It stands for dignity and modesty, for self-respect and self-restraint, for simplicity and sincerity. How much of those qualities is left among American citizens no one can say, but there may be more than appears on the surface and the emphatic choice of a man worthy to sit in the White House is evidence of it.

There is one form of corruption in America which touches industrial questions directly, and that is the bribing of inspectors. I have no first-hand knowledge of it and cannot say to what extent it exists, but I have seen much convincing evidence that it does exist. There is no sign of it in England or in Germany, and all the evidence points to the conclusion that it is never attempted or even thought of.

Passing on to those distinctive national qualities which bear most directly upon industrial efficiency, we find a most striking contrast between Germany and the United States. It is profoundly instructive to England, because she lies in the middle between these, her greatest competitors, whose merits and methods are diametrically opposite.

The Germans are slow, deliberate, careful, methodical

and thorough. Some people use the word "plodding,' which carries a touch of disdain; but Germany can afford to smile at it. She can point to her long roll of names in the very front ranks of intellectual achievement—in philosophy, poetry, science, statesmanship, scholarship, history, art and war—and challenge the least plodding and most hustling of her contemporaries to show the like. There is a round score of them at least, from Kant and Goethe to Wagner and Virchow, very bad to match. And with not less justice she can point to her industrial and commercial development to-day. Not a rich country, possessing no exceptional resources or facilities, no extensive and convenient seaboard, with no tide of skilled immigrant labour to make things easy, and with enemies in arms on both sides of her, she has yet within the space of thirty years, and while bearing the burden of an enormous system of military defence, built up from comparatively small beginnings a great edifice of manufacturing industry which for variety and quality of output can compete in any market with most of the finest products of Great Britain. That is no exaggeration but a plain statement of facts, and it can be said of no other country. It has been achieved by hard work, intelligently and methodically directed, by pains and thought and sacrifice. Industrially the Germans excel on the scientific side; they are not an inventive or adventurous people; they are not quick or ready in emergency; they are no pioneers in the wilderness; they require time for thought and action; they need regular hours, familiar surroundings and a road marked plain before them. But they have an unequalled capacity for mapping it out in the right direction and following it steadily. Every detail of their industrial life bears witness to these qualities, from the Government, which never misses a point or loses a chance of promoting national interests, down to the working man who requires an hour and a half every day for his dinner, but can be trusted to do exactly what is expected of him. Their dislike of hurry and their love of thoroughness are shown in innumerable little things. It is, for instance, a common practice of leading newspapers to defer comment on current events for a day or two; then they produce a carefully thought-out and reasoned essay, not a

hurried scramble of disconnected comments put together under a tremendous pressure which hardly leaves the ready writer time even to read the intelligence on which he is supposed to deliver a mature verdict. One never sees any one run in Germany, and a hurried pedestrian is a rare sight; but they get there all the same, as the Americans say.

The Americans themselves get there in exactly the opposite way. They are alert, inventive, ingenious and adventurous beyond all other people, but hurried, careless and unthorough. The merits of this temperament are more immediately obvious than the defects, and have consequently attracted more attention. The roar and bustle of industrial life in America, the excitement, the abundance of novelty, the enormous scale of operations, the boundless adventure, the playing with millions—all these impress the mind and draw attention from the defects which they foster and conceal. An English workman who had lived for years in the heart of it, where the smoke is thickest, the roar of machinery loudest and the sound of millions most common, summed it up better than any one I have met. "This is an adventurous country," he said, "they think nothing of millions; but it's all hurry-skurry work. Let her go! Give her hell! That's the word." The recklessness is magnificent and I suppose that at present it is business; but that is because the country is not yet filled up. This is really the bed-rock fact about the United States at the present time from the industrial point of view. It is an immense country, with vast natural resources, a sufficient population to develop them and yet abundant room for expansion. There are or seem to be boundless possibilities within the reach of every man, and being generally intelligent, alert and ambitious, they hurry to realise them. If a man fails to-day in one direction, no matter, he can try again to-morrow in another.

I make the suggestion with diffidence because I have no personal knowledge of the United States as it used to be in the past; but surely the tearing, driving character which is considered—and I think rightly considered—distinctively American is rather a new thing. The Yankee of old, as he used to be presented to us by American writers, and that

not so very long ago, was an astute but deliberate person, saying very incisive things in a slow, drawling way, quick of mind but slow of movement, not to be hurried and much given to "whittling," which is not a very feverish or purposeful occupation. Does anybody whittle now? Perhaps nobody ever did actually whittle; but I think that traces of the whittling spirit are still visible enough to any one accustomed to study details. The present spirit arose—so it seems to me—with the development of the railway system, which opened up the country, poured in the population, brought the natural wealth to market and produced the millionaire. Since then industrial activity has gone with a rush. There was money to start industries and money to be made out of them; there was power and raw material in the ground; there was labour, skilled and unskilled, coming along all the time. And there was nothing to hinder; no enemies to watch, no army to keep up, perfect security and tranquillity. A great industrial expansion was inevitable; it could not help coming and bringing with it boundless possibilities of wealth. The millionaire multiplied, swelled to double, treble, tenfold his former bulk, and set such a glorious, shining, dazzling example that no man could behold it unmoved. Now in the United States there is "equality of opportunity," and all men with millionairedom in their souls—a numerous body—felt that even if they could not reach that height they might get near it. So the scramble for money became the occupation of a large part of the population. Hence the commercial hurry-skurry.

But hereditary tendencies are tenacious, and latent whittling is visible all through the hurry. When a man waits for the elevator to take him up or down a short flight of stairs, he is whittling. When he comes down in the morning in dirty boots and sits on a chair for ten minutes to have them cleaned on his feet, he is whittling. When he gives up his baggage checks and waits for the man to get it out, he is whittling. These are all national practices and evidences of national smartness, but they are indistinguishable from dawdling to any one of a quick and energetic habit of body. They are a waste of time. Quickness in the States is of the machine and of the mind,

not of the person. The cars and the elevators hurry, the people do not. They contentedly wait for either twice as long as it would take them to cover the distance on foot. No one runs; few walk if they can help it. I have repeatedly missed a train and lost several hours by following directions and using the time-saving appliances which are so prized. On one occasion I had been over a mill and intended to walk back to the station, not more than 500 or 600 yards away; but the proprietor, who had shown me over and treated me with the utmost kindness, begged me to wait for the electric tram, which started from his door. He would not hear of my walking, and I yielded to his persuasion. The car was certainly very speedy, but it first made a detour of at least two miles and then left me stranded in the middle of the town, further from the station than at the start, to wait for another. I lost my train and about half a day. On another occasion and in another place I waited for the tram again under directions, together with a number of other people. We were all going to the station, and as I discovered afterwards we could have walked in half the time we wasted standing in the street. We lost the train, but they all took it with perfect placidity and settled down contentedly to wait for the next. After several similar experiences I perceived that it is trouble Americans care about, not time. Where trams exist walking is not thought of, though it may be quicker. After that I got over the ground better. On receiving the usual instructions I would ask: "But isn't it quicker to walk?" The question always excited surprise and often elicited a deprecating admission that it might be quicker to walk, but uttered in a tone which plainly said, "if any one in his senses ever did such a thing". It reminded me of a conversation I once had with a German who was extolling the merits of socks made, like gloves, with separate toes. Among other advantages claimed was cleanliness. I ventured to object that it was quite possible to keep the feet clean without this device. "Oh, well," he said, "if you were to take a bath every day, but who does that?" His conception of personal cleanliness was limited by local custom, and so, I think, is the American conception of personal quickness.

The elevator plays the same trouble-saving, time-wasting part inside that the electric car does outside. It is very speedy for high flights, as the other is for long distances, and the sky-scraper would be impossible without it, but dependence on it wastes much time. Stairs have fallen out of use. In public buildings, hotels and business premises you are invariably directed to the elevator. You may have to walk round two corridors, ring the bell and wait two minutes or more ; still that is assumed to be preferable and is actually preferred to walking up a flght or two of steps, or even down them, in a quarter of the time. Similarly with the check system for baggage. It saves trouble at the expense of time, though no true American will admit it. The terrible old English plan of picking your luggage out of a heap and going off with it is troublesome but far more speedy, and a nation which always prefers bodily action to inaction is not likely to give it up for the convenient but tardy check process, which, by-the-by, is of European, not American, origin. Type-writing is another insidious means of saving trouble and wasting time. Rather than write a letter a man will wait for the type-writer long enough to write a dozen ; or he will rattle through his correspondence in a few minutes in order to spend hours in talking, a method of wasting time to which Americans are peculiarly addicted.

I dwell on the distinction between saving time and saving trouble, and on the fact—of which the close observer will find innumerable other proofs—that the latter and not the former is essentially characteristic of Americans, because it has an intimate relation to the distinctive qualities of their industrial success. The line in which they are supreme is the invention of labour-saving machinery. They possess an inexhaustible fertility in devising ingenious contrivances for replacing toil. One explanation of this is the necessity of minimising labour because of its high cost. No doubt that is a great stimulus, but there is more than that. There is a positive dislike of processes involving physical exertion. Perhaps this is the correlative of great mental activity and is eventually traceable to climate. It is often said that the air in the United States has a peculiarly stimulating effect, and I think that is true. It is

certainly different from the air on this side of the Atlantic. I noticed a number of definite physiological effects on myself, which proved to me that the climatic influence is real. It stimulates cerebral activity in certain directions, of which speech is conspicuously one. The Americans have a natural gift of oratory and are tremendous talkers. It also promotes a general nimbleness of mind which appears to take the place of bodily movement. What is restlessness of body in these damp islands becomes restlessness of mind in that dry air. Hence the paradoxical combination of love of hurry with dislike of bodily exertion. It is the mind that hurries, and no doubt it hurried in the old whittling days; but the material objects among which it moves to-day with so much visible effect did not then exist. The distinctive quality of American humour is the surprise caused by the mind jumping to the end without taking the intermediate steps—a form of irony.

These qualities have a weak side. They are fatal to thoroughness and finish unless these can be attained by mechanical means, which is very rarely the case. For first-class work some plodding is required. The elevator whisks you up to the top of a sky-scraper in no time; but there are heights above sky-scrapers, and to reach the summit you must climb with toil and pains. It is surely remarkable that so little first-class work of any kind is produced in the United States, with all its wealth, population, intelligence and educational keenness. An American writer on science has recently deplored the fact in relation to that field of intellectual activity.[1] All the recent discoveries of importance, from bacteria to radium, have come from Europe. This comparative sterility is commonly ascribed to the worship of wealth which attracts and drives the educated youth of the country into commercial careers. That has something to do with it, but is an inadequate explanation. The number who go into academic life and the learned professions is very large, and they produce a great deal of a certain standard, but nothing really first-rate. Probably the nearest approach to it is in art; but the eminent American painters and sculptors seem to live

[1] *New Conceptions in Science*, by Carl Snyder.

chiefly in Europe, and their work characteristically lacks the merit that comes from plodding. It is marked by bold conception, daring innovation, and it is effective; but the effect is got by slap-dash means, not by faithful finish. Or take architecture, which is more in evidence than anything else. I shall have more to say about it when I come to describe American cities, and will merely quote here some remarks made in my presence by a better judge than myself, an American architect of high standing. "In architecture, Americans only stick decoration on to utilitarian forms as quickly and cheaply as possible. They never carry anything to its legitimate development, to the point of being a masterpiece. Architects are always asked to put a quart into a pint pot. Not a piece of work ever comes into my office with enough money to carry it out even decently; everything is done in a hurry. What is wrong is the attitude of mind, which has never got beyond adolescence. An American street reminds me of nothing so much as a drummer's sample book. Everything is absolutely undignified, a regular harlequinade."

Another home critic draws an illustration of the same failing from a different field of observation:—

"There is a danger that slovenliness may become a national habit. Slovenliness is something more than a violation of good taste: it is indifference to the best way of doing things; it is a kind of easy-going morality in matters of method; it involves a low standard and its influence upon children is in the last degree disastrous. Now in nothing are Americans, as a whole, more slovenly than in the use of their own language. Everywhere, wherever men and women talk, one hears careless, inaccurate, slovenly speech."[1]

I should hardly say that myself about American speech. There is an affectation of slovenliness as a smart thing, noticeably in New York, of which I say more presently in connection with that city, and children are allowed to mumble anyhow in school, but otherwise my impression certainly is that—apart from questions of accent—American enunciation is better than English. It is clearer and

[1] *The Outlook* (New York), 4th April, 1903.

more distinct, and the general use of language in conversation, class for class, is not inferior. Professor Stanley Hall does, indeed, say of the language:—

"By general consent both high school and college youth in this country (United States) are in an advanced stage of degeneration in the command of this, the world's greatest organ of the intellect. Every careful study of the subject for nearly twenty years shows deterioration."[1]

I am not in a position to deny it, and to judge by comparing the signatures to the Declaration of Independence and those of the men who represented the United States a hundred years later (suggestively published together in *facsimile*), mental degeneration of every kind has been going on for a good deal more than twenty years.[2] But I am afraid we are in no better case on this side. To my ear, which is very sensitive on the point, most people everywhere speak with painful indistinctness, and their vocabulary is undeniably miserable. In one respect we are in worse—much worse—case. It is not strictly relevant to the point, but it must be mentioned, and I take this opportunity to mention it. If there is one thing above all others that the English people have to be ashamed of, it is the language habitually used by the lower classes. It has undergone a marked change for the worse within my own recollection. Rough working men formerly used "swear words," and Dr. Johnson's "term of endearment among sailors" was often in their mouths, but they were of the lowest class and they did not use the filthy language current now. In my own part of the country, though the people speak more emphatically there than anywhere else, even labourers only used modified expletives, such as "dang" for "damn," "gor" for "God," and so on. Children were not foul-mouthed. I perfectly recollect the bad language used by men in the streets when I was a child, as I was rather observant, but I never heard any from children in any part. Now the most filthily obscene expressions

[1] *Adolescence*, by G. Stanley Hall.

[2] The contrast in these interesting *facsimiles* between the fine, strong, clear signatures of 1776 and the scratchy, nervous, illegible scrawls of a hundred years later is very striking. A highly patriotic and cultured American, to whom I mentioned it one day, said: "We have not fifty-four such men in the States to-day."

have become current coin and are perpetually in the mouths not only of rough men and vicious youths, not only of women, but of little boys and girls. It is sickening to hear them, but apparently it gives no concern to the "educationalists," who are so immersed in controversy and theory as to be blind and deaf to what is about them. This language is not used in America. As for Germany, the swear words are of a very mild order and abusive language is actionable. Correct German and good enunciation are made a cardinal point in primary education, and the greatest pains are taken to secure them, as I have repeatedly witnessed.

But whether slovenly speech be an American failing or not, there is no doubt about slovenliness in other, less personal, matters. "Let it go at that," seems to be written all over the face of the land. You see it in wretchedly laid railway and tramway tracks, in swaying telegraph poles and sagging wires, in sliding embankments and rotten trestle bridges, in level crossings, in dingy and battered street letter-boxes, in broken fences, in streets unscavenged, unpaved or full of deep holes, in broken-down vehicles with ricketty wheels too slight for their work and harness tied up with string, in rubbishy cutlery and a hundred such articles, in scamped and hurried work everywhere. There seems to be a disdain or impatience of thorough workmanship and finish in detail. This is one explanation of the railway death-list. In the three years ending 30th June, 1900, there were killed on American railways 21,847 persons; in the South African War, which lasted about three years, there were killed in battle and died of disease about 22,000. Since 1894, when records began to be kept, 78,152 persons have lost their lives by railway accidents, and the number rises year by year; in 1903 it reached 9,984. When you see the railways and observe how things are done, you are not surprised.

The same national failing is conspicuous in the factory and workshop. You see machinery racketting itself to pieces and spoiling the material in the attempt to run faster than it can; you see waste of fuel and steam, machinery clogged and spoiling for want of care and cleanliness, the place in a mess and the stuff turned out

in a rough, badly-finished state. When you see this over and over again, you begin to understand why the United States, with all its natural advantages, requires a prohibitive duty on foreign manufactures which it ought to produce better itself. The duty on cotton goods ranges from 68 to 88 per cent., and yet the newest hotel in New York has to get its cotton fittings and furniture from Lancashire. Similarly men who wish to be well-dressed have to buy English cloth weighted by a duty of 100 to 140 per cent.

There are exceptions, however. I have seen, and shall describe, factories to which none of these remarks apply, and where beautiful work is done. Such establishments can sell their products anywhere and do not need protection. These products are, for the most part, of a particular kind, and conspicuously illustrate the national qualities. They are ingenious machines or other articles specially designed to save labour and trouble. Perhaps the most important are agricultural machinery and small automatic machine tools used in a great variety of industries; but articles in domestic use, such as type-writers, sewing machines and fountain pens, are more familiar. Americans excel, not only in the invention, but in the making of these things, which are turned out exceptionally light and well-finished. That is their distinctive line—the production of dodgy, trouble-saving, convenient mechanical appliances of a light kind. In it they are great innovators and supreme; outside it their work suffers from hurry, want of finish and want of solidity. I have seen heavy machine tools by American makers in English and German workshops and the verdict was identical—they are too light for the work. Heavy drills, for instance, shake so much when set to work that they do not bore true. For the small American tools, both English and German manufacturers have nothing but praise.

I have dwelt somewhat long, and, I fear, too discursively on these points, because they do not appear to be generally appreciated; but they are essential to an intelligent comparison. To recapitulate, the German method of advance is by careful, well-considered steps; the American by brilliant leaps—it is much quicker but sometimes lands in the wrong

place. The English, as I have said, come between. They are less—very much less—methodical than the Germans, less alert and enterprising than the Americans. Thus they do not exhibit the distinctive merits of either, and they are always being scolded for it, first on one side and then on the other, by candid critics at home who do not take comprehensive views. But when you come to think of it dispassionately, a middle position is not a bad one to occupy, for if it misses the merits of the extremes it also avoids their defects. The English do not set about things in such a systematic and scientific way as the Germans, nor are they so bold and dashing as the Americans, but they work much more quickly than the former, and much more carefully than the latter. They can hurry, if need be, and yet turn out good work. Industrially they believe themselves to stand alone for first-rate workmanship, though in that they are a little mistaken. The Germans, it is true, were at one time noted for producing cheap and inferior things, but that was because they could only find an opening in that direction. Having secured their footing they have proceeded steadily from lower to higher grades and have proved that they will not stop short of the highest. They are gradually but surely mastering every industrial field in their own way. There is, however, justification for the pride of English manufacturers and workmen in their achievements. Their work is distinguished by solidity, durability and finish, and at the same time they have been great pioneers, the greatest. They are an inventive people; the inventive genius of the Americans is derived from their British blood, and not a few of their inventions are actually of British origin. One of the most recent and most important—the automatic loom—is the invention of a Yorkshire mechanic, taken up and developed into a practical thing by an American firm. Another—the ring spinning-frame—originally hailed from Lancashire: it has been improved and developed by American ingenuity and has now come back again. The United States, prolific as it is in clever patents and in the improvement and application of processes, has yet to produce an original invention of the industrial importance of the power-loom, the carding machine, the spinning-frame, the combing machine, the

puddling furnace, the crucible, the Bessemer converter, the open hearth, the steam hammer, the rolling mill, the hydraulic crane and the hydraulic press, not to mention the steam engine.

Thus in regard to national qualities the English are perhaps rather better equipped by nature for industrial success than either of their chief competitors. Wherein they fail is in the application of their powers, which have been to a great extent allowed to fall into disuse, while the others have gone ahead each in her own way. In both I have met with a pretty general tendency to regard England with a sort of pity, mingled with contempt, as a spent force. It is a frame of mind which does not show much more grasp of the true situation than the total disbelief in the validity of foreign competition and in the capacity of any one to compare with themselves professed by every trade union official in England whose opinion I have asked. I believe the truth to be that, on the one hand, foreign competition is real and serious in the present, and going to be far more severe in the near future; and that, on the other, the English still possess the energy and capacity which distinguished the nation of old, but have for some time past directed both into other channels. The survival of capacity may perhaps be seen in the fact that out of the three most important mechanical developments of the day, while electrical traction and power owe most to the United States and Germany and automobile traction to France, the steam turbine, which may turn out to be more important than either, owes most to England. The history of the Atlantic Shipping Combination, which has had to fall back on an English manager, and the large contracts recently secured in America by English firms, suggest the same reflection. The other channels to which I refer are amusement and play, which have become our work in all classes. I shall have more to say on this head later on, and merely make the statement here to explain my meaning in saying that it is not so much in the possession as in the application of qualities that the weakness of the English lies. But, of course, application itself implies certain qualities; and here again we find some interesting national differences.

I have suggested that the restless driving character of

the Americans has been set in motion by the desire for wealth and the potentialities of millionairedom, and undoubtedly that is a prime factor. But there is more than that; it would be unjust to ascribe their enterprise and activity merely to the pursuit of money. They are a highly emulative people, and anxious to beat not only their competitors but themselves. "Beat our own record" is one of their mottoes, and an uncommonly good one. They are not content to stand still and maintain a position, they want to improve it. There is something of this feeling in England, but it is confined to golf, pheasant shooting, or cricket. A man is intent on beating his own record in these and similar pursuits, but in business he is content to let the old record stand. This is only another way of saying that play is our work. A more essential difference is embodied in another American motto—"Don't grumble, boost".[1] The English are inveterate grumblers; they make the worst of everything. Things are always going to the dogs; some business or class or section of the people is always in a desperate state and doomed unless prompt assistance is forthcoming from the Legislature or from somewhere. There is a good deal of mere habit about it; the grey climate gives Englishmen *le spleen*. But the habit of whining is not very healthy or manly, and the practice of asking for help enervates and demoralises. The buoyant self-confidence of Americans may be a little overdone, but it is a great source of strength. The Germans are different from both. They neither whine nor boost, and they do not trouble themselves about records, whether of golf or business. They plod along steadily and laboriously from point to point, partly because they are compelled by force of circumstances and partly from a sense of duty, which is still a great force with them. They have the habit of work by tradition and training, and they are compelled to develop their industries in order to support the growing population, on which the maintenance of their national position depends.

One method of boosting in America deserves particular

[1] "Boost" is good American and a useful word. It is used both as a verb and a noun: "I boosted him up," or "I gave him a good boost". The meaning is much the same as "shove up," but it has also a sense of making the best of things and putting a good face on them.

notice, and that is advertisement. In this art Americans lead the world so successfully that no competitor is in the running. The English humbly follow at a respectful distance; no one else is in sight. The art is practised in innumerable ways: from dressing the shop window, of which I give some account later on, to the issue of Government returns which point out the progress made by the country in one thing or another, and explicitly state that the United States leads the world in this or that. Advertisement is undoubtedly a great and growing engine for promoting commercial success; its uses in the day of universal education, universal newspapers and universal communication by electricity and steam, are unlimited. It is a proof of the supreme alertness of the Americans that they have grasped its significance and laid themselves out to apply it. But its development in America is also assisted by a very curious trait in that intelligent nation. I mean the toleration of shams. Like the toleration of unfinished work, with which it is connected, the toleration of shams is pervasive. It is illustrated in daily life by the pretence of a single class in railway travelling, by the use of such euphemisms as "help" for servant and "charity" for pauperism. It even finds permanent expression in the national palladium, the Capitol at Washington. That finely designed and truly imposing edifice is not guiltless; the central building is of coloured stone painted to look like white stone, and not devoid of cracks; and the dome is iron, which is to say, it is not a real dome at all. Something more than toleration, almost an affection, for shams is shown in the encouragement given to every kind of imposture and quackery. America is the land above all others where everything which appeals to credulity and ignorance flourishes. It is there that the new religions arise, and, no matter how impudent the pretensions of their founders, they meet with thousands of infatuated believers. It is there that the medical quackeries, the patent foods, the beautifiers and all that gallery flourish most. They advertise to an incredible extent. I took the trouble one day to count the quack advertisements in the chief morning paper published in the most intellectual city in the States. There were sixty-three thus divided:—

Drugs and treatments	33
Beautifiers	11
Fortune-telling	10
Foods and drinks	9
Total	63

A few among them may have been genuine, but most were obvious impostures. Among the medical ones a large proportion were of the kind known as "indecent," very thinly veiled. In little local papers I have seen fully three-fourths of the printed matter consisting of these advertisements, published not only in that form but as news and letters to the editor. The impudence of some reaches the sublime. I remember one which ran something like this:—

"I do not profess to cure rheumatism, or bronchitis, or any single disease. *I cure everything.* I have discovered the source of life itself, and bring back from the grave."

We have them in England, it is true, and they are growing. Many come from America, which is undoubtedly conquering us in this as in other things; but as yet there remains a certain amount of prejudice against quackery. The last religious impostor was hooted out of the country, and other fantastic sects which have a great following in the States have only gained the adherence of a few idle persons in England. The medical and dietetic quackeries are less numerous with us, and their advertisements are mainly confined to periodicals which circulate among the most ignorant. I attribute the prodigious vogue of impostures in America to the boundless faith of Americans in their own country as the pioneer of civilisation and enlightenment, to the wide diffusion of superficial education and to the general contempt for the experience of mankind at large. They have no reverence for what is old and proved outside their own borders, and not much for that within them. I do not speak of the highly educated, the travelled and well-informed, who are a limited class, but of the mass of the people, who take no interest in other countries, who believe that they have nothing to learn from them and that all things are possible in their own new land. This feeling amounts to a superstition which blinds their intelligence. The same contempt for other countries characterises the bulk of the English people and is called insu-

larity; but the Americans are even more insular, and their contempt for experience is not shared by the English, who err rather in the opposite direction and are in many things too obstinately conservative. This quality has its drawbacks and tends to dullness, but it saves from running after a good many false gods, whether in religion, in legislation, or in what is called "science". Perhaps the last is the most fashionable field just now, and as an instance of the lengths to which American self-confidence will go, I may mention that there are some ladies who not only agree with Sir Thomas Browne in wishing that children could be produced, like trees, in some other way than that prescribed by nature, but are seriously engaged in experiments for producing them. Such fantastic nonsense would hardly be possible yet in England, though we shall probably come to it with the progress of education. As for the Germans, shams and impostures of any kind stand a very poor chance before the deliberate and logical habit of mind which they bring to bear on all questions. Medical quackeries are probably forbidden by law, at any rate very little is to be seen of them, and religious ones soon have notice to quit. In other matters they are equally intolerant of shams and insist, to the point of pedantry, in calling things by names which indicate precisely what they are. These national differences find expression in a matter which has a direct and important bearing on the conditions of industrial life. I mean the observance of the law. In Germany, laws are made to be kept, and to that end they are very carefully made. In England, they are less carefully made and correspondingly ill-observed, but obvious shams are not openly tolerated. In the United States, the general contempt for law is astonishing. I am inclined to think it is the most salient feature of American civilisation. I know exactly the opposite impression prevails there, and it is assumed as an axiom that Americans are law-abiding far above all other people, because law represents to them "the majesty of right, not the tyranny of might". That is a fine phrase, but belief in its reality is an illustration of the national toleration of shams. The tyranny of might may be exercised by a majority as well as by an autocracy. This truth is implicitly recognised by a conference of

American churches in an address to the Archbishop of Canterbury, dated 7th November, 1904, which complains of the oppressive character of the recent English Education Act, although it rests on the same principle of the "majesty of right" as laws in America. Some persons in England undoubtedly think it oppressive and have refused to obey it. In the same way oppressive laws in America are not obeyed; they are evaded or defied. And I know no country in which laws that interfere with the liberty of the individual are so common. They are of a sumptuary character and intended not for the protection of the public and the maintenance of order but for the promotion of morality. In some States, for instance, kissing is a penal offence, in others, the giving of tips. Laws like these cannot possibly be enforced. The more stringent of the liquor laws are of the same character; and I believe these and the like enactments are largely responsible for the general contempt for law which pervades American life. I should hesitate to make this deduction from my own knowledge, but it is recognised by very competent native observers. For instance:—

"There have been concomitant evils of prohibitory legislation. The efforts to enforce it during forty years past have had some unlooked-for effects on public respect for courts, judicial procedure, oaths and law in general, and for the officers of the law, legislators and public servants. The public have seen law defied, a whole generation of habitual law-breakers schooled in evasion and shamelessness, courts ineffective through fluctuation of policy, delays, perjuries, negligencies and other miscarriages of justice, officers of the law, doubled-faced and mercenary, legislators timid and insincere, candidates for office hypocritical and truckling, and office-holders unfaithful to pledges and to reasonable public expectation."[1]

Lynching is, of course, the stock illustration of lawlessness, but it hardly seems to me a fair one, because the racial antagonism to which most of it is due is a unique condition; and other cases generally take place in remote

[1] *The Liquor Problem in its Legislative Aspects*, Committee of Fifty, p. 5.

communities where the executive is probably somewhat inadequate to the maintenance of order, if I may judge of my own experiences in the model city of Washington. One evening I visited an elderly man who had a special knowledge of trade-unionism. He kept a small shop with a pool-room behind, in which some youths were playing. We talked in the shop while they played. When they had finished their game they began to interrupt us by making a noise and eventually throwing things down on our heads. The old man tried to stop them several times and begged them to be quiet, but they "only did it the more". At last I had had enough and got up saying audibly: "Why don't you kick these cubs out? If you don't care to do it I shall be delighted to do it for you." That had the desired effect; they slouched out and he put the lights down. I said, "Why do you stand it? Why on earth don't you call in a policeman?" "Police!" he said bitterly, "there *are* no police. You've got to put up with things here." I could not help feeling that a little lynching in the shape of a broken head or two would have met the case, and am therefore not disposed to be hard on those who take the law into their own hands in a country where it cannot be relied on. Roughs are to be met with everywhere, but these were not roughs, they were respectable youths; and though young men of any class will at times make a nuisance of themselves anywhere, I know no other civilised country where a man is bound to put up with it. The incident was trivial in itself, but the spirit of lawlessness displayed, which I have only faintly indicated, and the helplessness of the poor man were new experiences to me, though I have wandered far and wide for a good many years. I have observed many other signs of the same spirit, which culminates in murder with impunity in the open streets, sometimes by persons occupying prominent public positions. The number of reported homicides in the United States in 1900 was 1,829, or, roughly, 1 to 40,000 of the population; in England, in the same year, it was 278, or about 1 to 110,000. The American returns are probably incomplete, but taken as they stand they show an enormous difference. Homicide is nearly thrice as frequent in the United States as in England. Part of

this must be attributed to the foreign element, and that explanation is usually offered, as it is for most unpleasant facts in the States; but the *Philadelphia Record* has pointed out that "lawlessness and acts of violence are most common in those States where there is the least admixture of foreign population. The really dangerous classes in this country are not imported; they are natives." I have failed to discover any returns which would enable one to apportion the responsibility; but I have no doubt whatever that the social atmosphere of the United States encourages the natural tendency of some foreigners to violence and conduces to general lawlessness. I have felt it myself, having observed the conduct of others and having been instructed in the art of evading particular laws.

The special form of lawlessness which has the most direct bearing on industrial conditions is the evasion of factory laws, building laws, and the like, intended for the protection of the public or of particular classes. Here corruption may also come in as the handmaid of lawlessness, and the state of things cannot be attributed to the foreigner—it is quite American. Sometimes a public disaster, such as the Chicago theatre fire or the burning of the *General Slocum* steamship, draws attention to the disregard of the law. In other matters, such as the reporting of accidents or the employment of children, illegalities only come to the notice of those who make a special study of the subject. The States appear to vary as much in the observance as in the enactment of laws, but it is never safe to assume that because laws exist they possess even a fair degree of validity, as can be assumed in most European countries. They may, and in some States do, but in others they practically possess no validity at all.

Another point I have to mention in these general international comparisons is one in which Germany and America have the advantage over England. There appears to be, in both, a more general demand for information on industrial, social and, indeed, on all serious subjects. At any rate there is a much better supply, and I infer that it comes in response to some demand. It comes from both official and from private sources, chiefly from the former

in America, but more from the latter in Germany. With regard to official information the only subjects in which England decidedly takes the lead are vital statistics and public health. In these fields the United States is deplorably behindhand. It has, in fact, hardly any vital statistics worth the name except in Massachusetts and Rhode Island, and they are far from perfect. Those of Germany are very much better but not so complete as the English ones. The United States, however, makes up for this deficiency by the extraordinary fulness of information available in other fields and the unique liberality of its distribution. The Census alone is an amazing and bewildering production. I never look at it or think of it without paying a tribute of astonished respect to those who conceived and executed it. Fourteen volumes on a scale considerably larger than the *Encyclopædia Britannica* stand on my shelves, and others appear to be still coming out. That is the Census of 1900 (the 12th). It is surely by far the greatest statistical compilation ever conceived. Then there are the admirable annual reports and periodical bulletins issued by the Department of Labour (now a "Bureau" in the Department of Commerce and Labour) and edited by the Commissioner of Labour, Mr. Carroll D. Wright, who combines width of grasp with minuteness of knowledge in an extraordinary degree. They form a library of special inquiries. The reports issued by the Education Department, of which Dr. William T. Harris is the present Commissioner, are no less valuable. Both these sets of publications are packed with solid information, and others are issued by other Departments. Then several States collect and issue information of a similar kind. Conspicuous among them is Massachusetts, which publishes a labour bulletin invaluable to social students. The English official reports and publications are good, but they contain very little information outside the official routine. An exception is formed by the excellent consular reports of the foreign office and the special reports of the Education Department, but the latter are too much given up to enormously long and discursive essays and too little to facts. However, they reveal an increasing interest in serious information, and a growing appreciation of special

inquiries. But official publications are not necessarily a guarantee of public interest, and in England "blue-books" are very often still-born. The public demand for market books and periodical literature of an informing kind is a better guide. I am not sure how England stands in this respect in comparison with the United States, but my impression is that the demand is far greater in the latter. About Germany there is no sort of doubt. The official statistics will, on the whole, compare very well with those of England and the United States, though the lack of a more frequent occupational census[1] is a defect, but it is in non-official publications that Germany is pre-eminent. One is rarely at a loss for some compilation containing just the information required. I do not speak of abstract discussions on the "ismus" of the moment, which is the nightmare of the German mind; they are poured out like water and are often worth no more. I speak of facts. For instance, my first act on finding myself in a strange town is to buy a map. In Germany I confidently step out of the railway station, turn down the first street of shops, find a bookseller's within a hundred yards and get a capital map with a little book telling me the main facts about the place for a shilling. The quest rarely fails even in towns of 20,000 or 30,000 inhabitants; in England it rarely succeeds in ones five or ten times as large; in America still more rarely. They do not seem to have much use for maps. Again, compendious handbooks on such matters as law and administration are always forthcoming in Germany. One such book—Graf Hue de Grais' *Handbuch der Verfassung und Verwaltung* is a veritable miracle of exact, concise and luminous information, brought continually up to date, and the Gutentag'sche *Sammlung Deutscher Reichsgezetze* fills in the details in a masterly fashion. We have nothing like these and others of a similar character, nor like Schmoller's *Jahrbuch*, Neefe's *Statistisches Jahrbuch Deutscher Städte*, and many more. There must be some demand for these things, for they are expensive to produce. I doubt if any English publisher would look at

[1] It is only taken at long and irregular intervals. The last was in 1895, the previous one in 1882.

them. There are gaps, it is true. Very little information is obtainable on the subject of wages and hours of work, which has been officially handled in such enormous detail in the United States. On the whole, however, I must give the first place to Germany and the second to the United States. In both much more concern for serious things is manifested than in England.

A factor which exercises an influence second to none upon national qualities is domestic and family life. But it is delicate ground and I hesitate to tread upon it. For reasons already pointed out a real inside knowledge of family life in another country is hardly possible, and the individual's range of observation even in his own is very limited. But the matter is too important to be passed over and certain points are so strongly marked and so generally recognised that some broad distinctions can safely be drawn.

The position of women is very different in the three countries, partly by design and partly by accident. Once more the sharpest contrast lies between Germany and America. The former leans upon tradition, experience and the physiological distinction of the sexes, which assigns to them different spheres of activity; the latter defies tradition and physiology alike and insists on a theoretical equality. But this equality is not maintained; it is overthrown by the accidental fact that in the United States women are in a minority. The law of supply and demand consequently gives them an effective advantage which the theory of equality enables them to utilise to the full. The demand being greater than the supply they can make their own terms. This is very curious and it shows the vanity of repudiating Nature. For the sexual distinction, which is denied by the theory of equality, re-asserts itself, and with the help of the theory once more overthrows the equality, but on the opposite side. The position of the sexes is reversed. In Germany women are "subordinate," that is they take orders from men; in America they are dominant and give orders to men. This does not mean that they exercise no sway in Germany and submit to no orders or rule in everything in America; it means that in many things concerning the common life what is settled by the fiat of the man in Germany is settled by the fiat

of the woman in America. To use plain American, in the former country the man is the boss, in the latter the woman. Let me give an illustration. A member of a manufacturing firm, a youngish man, having very kindly shown me over his mill, said he would leave me with the manager as he had to go out. His wife was waiting for him. As he was leaving he said to the manager: "I am not sure whether I shall be back or not". "He will not be back," said his wife quite simply but with an accent of certainty, as pertaining to the predominant partner whose word was final and admitted of no argument. He made no reply, and they went. "She is the boss," said the manager, who happened to be an Englishman, "the women are the bosses here." That, I believe, is universally recognised. The fact was put forward to me by an American in explanation of the singular fondness for societies with romantic names and fancy ceremonies in America. They are extremely numerous. "Knights" of this and that—Pythias, Columbus, Sherwood Forest, Honour, even Labour—are very popular; then there are Sons of St. George and other heroes of chivalry. Struck by the number of these institutions I asked the reason. "Well," said my friend, "they like dressing up and that sort of thing; it gives them a chance of doing a little bossing which they are not allowed to do at home." Women have similar societies of their own, and the vogue is explained by their craving for social distinction,[1] which means bossing other women.

In England the position of women comes nearer to the German than the American model, though the movement is all in the latter direction. They are less submissive than in Germany, but on the whole distinctly subordinate to the men and with no pretensions to the sort of domination exercised by American women. Those who decline to accept masculine supremacy seldom marry. As a rule wives like to submit to their husbands, daughters to their fathers and sisters to brothers; they like a masterful man. One occupying the position common in America is called "henpecked" and is not admired.

The result of these differences may be put in this way.

[1] *The Social Unrest*, by Graham Brooks, p. 234.

The ideal wife is, I suppose, at once a helpmeet and a stimulus. In Germany the helpmeet character predominates, in America the stimulus. Each exercises a powerful influence on the national life. No single factor contributes more to the strength of Germany than the domestic character of the women. The houses are well kept, the children well cared for, the income expended to the greatest advantage. Among the working classes these things go a very long way to neutralise the disadvantages of lower wages and inferior housing. In all classes they are an immense help to the man. In America, on the other hand, the feminine stimulus is a great incentive to that strenuous application and restless enterprise which stand out so strongly in contrast with European sluggishness. Both characters have their weak points; the helpmeet is liable to be blunted to a drudge, the stimulus to be sharpened to a goad. Of the two the latter is the greater evil. The spoiling of women in America, though it makes the men work, is not so good for the women themselves; it fosters an exacting disposition, extravagance, love of admiration and amusement, and a distaste for domestic duties which most seriously threatens the national vitality. And it reacts on the men, who console themselves elsewhere for exactions submitted to at home.

As for England, the position of women, which accentuates neither of the two characters, is perhaps more favourable for their union. The ideal may be realised in any country, and far be it from me to suggest that it is not, either in Germany or in America; but the best type, which is more honoured than the *Haus-frau*, more loved than the over-exacting *domina*, and which wields more real influence than either, has a better chance of being produced where women are neither too submissive nor too domineering. On the other hand, I am afraid that the type more often produced in actual life is neither helpmeet nor stimulus, but lacks the solid virtues of the one and the brightness of the other. We certainly have a class of women already numerous, and probably increasing, who are a source of great national weakness. They are ignorant, idle, extravagant and self-indulgent. They neglect their children and their homes, they drink and bet; and they exist in all

ranks of society. The wretched appearance of so many working class homes and children, which constantly horrifies visitors to this country, is quite as much due to this type of woman as to the self-indulgent man who matches her. Neither in America nor Germany nor in any other country that I have seen do women drink and bet as they do here.

A very curious thing in the United States, which constantly strikes English visitors, may possibly be connected with the habit of being bossed at home. (The American word best expresses an American thing.) I mean the toleration of bosses in general, political, economical and social. Americans submit to oppressive conduct with a meekness which astonishes Englishmen. A small incident will illustrate the point. When I was in Columbia (South Carolina) the morning train to Charlestown, which is to Columbia very much what Glasgow is to Edinburgh on a small scale, was held back one day for two and a half hours because the son of the President (Chairman) of the railway company wanted to make the connection. There were men of business, lawyers who had to be in court, and other passengers with serious interests on the train; they lost their day and went home. Traffic is sometimes a little disarranged in England for royal trains, but such an incident as this is inconceivable; the public would not stand it. The railways are great sinners, and the feudal sway they exercise is reflected in the haughty demeanour of their retainers, who habitually treat the travelling public as the men-at-arms of a noble lord used to treat the rabble a few centuries ago. Even the coloured attendant, though he never fails to protrude his claim to a tip and is extremely civil in other menial capacities, borrows an air of superiority from the railway and becomes a small autocrat on the cars. Among other licensed oppressors the very wealthy are conspicuous. They seem to do just what they please. At Newport, the principal watering place on the coast between New York and Boston, they have practically annexed the foreshore for miles in one direction. It can only be reached by going through their gardens, which occupy the edge of the cliff in a continuous line. Yet no people have a higher spirit than citizens of the United States; few have one so

high. I can only explain their submissiveness to the innumerable bosses who oppress them by the habits learnt at home, or perhaps at school. It is noteworthy that in matters in which women are keenly interested, the position is reversed; individuals do not oppress the public, but the public, or what appears to be the public, oppresses individuals, as in the numerous legislative restrictions of personal freedom, which are usually engineered by feminine influence. It extends even to opinions, for there are subjects on which people dare not say what they think, as recent American writers of weight and standing have pointed out. This is tyranny indeed. I know no country in which there is so much license for the evildoer and so much interference in a petty way with the personal freedom of the innocent.

But it is time to bring this chapter to a close. I will do so by answering a question which may occur to some readers. How is it that such a sharp line can be drawn between America and the two European countries in regard to national qualities when there is such a large and constantly renewed admixture of Germans and British in the States? The answer is well known. Americans pride themselves on few things more than on the capacity of the great Republic to absorb, assimilate and americanise the Europeans who migrate thither. It does in fact do so, just as England has done the same thing for centuries, not on so large a scale of course, nor so deliberately and systematically. In America, it is true, there is so much room that some nationalities are able to form corners which keep to themselves to a considerable extent, maintain their language and habits and intermarry little with other nationalities. Apart from New York, which is an *omnium gatherum*, and other trading or manufacturing centres which provide a labour market near the point of entry, the immigrant races tend to seek those parts which possess a climate most like that of home, and there they form settlements which grow by accretion. For instance, Louisiana has more Italians than any other Europeans, Minnesota has more Scandinavians, New England more Canadians; Finns and Hollanders go north to Michigan, Spaniards south to Florida, and so on. The British are the most evenly

distributed, and the most fully assimilated, and after them the Germans. There is no doubt that both become rapidly americanised, and are sometimes more American than the native-born. It is curious how English workmen in particular throw off their old habits in the course of a few months and fall into local ways and the local spirit. I have no doubt at all that climate, which is the great standing condition influencing customs and character, is a powerful factor in this transformation. But there is a spirit in the air which is not all due to climate—the spirit of endeavour, of expansion, of belief in a great destiny in which every individual shares. It is an inspiring atmosphere and does not fail to affect even the adult immigrant. But the instrument by which assimilation is most systematically effected is education acting on the children, who are regularly taught pride in American citizenship, the glory and splendour of patriotism. That is a great thing.

CHAPTER II.

INDUSTRIAL DISTRICTS IN ENGLAND.

In a sense manufacturing countries and manufacturing districts in them are born, not made, if one may use the expression. It is true that in every country industries are carried on and are widely distributed. Apart from hand trades, which are ubiquitous, some manufactures are to be found in all large centres of population, and capital cities are generally the seat of many. But there is a tendency to concentrate the leading branches of manufacture in particular areas which form more or less specialised industrial districts. Such concentration is due to one or more of three primary causes—proximity to (1) raw materials, (2) power, (3) a market or facilities for transport. A secondary cause which comes into operation later but is hardly less important, is the possession by the local population of special skill, handed down from one generation to another and acquired at an early age. It explains the tendency of a skilled industry, established in a particular spot for primary reasons, to remain and grow in that spot after the original reasons have ceased to exist. The district known as the Potteries in Staffordshire is a notable instance. Other conditions, such as a peculiar atmosphere favourable to particular processes, assist in promoting the same result. Thus we see that the concentration of industries in certain localities and the growth of such centres are not accidental or arbitrary, but are dependent on physical laws. Industrial districts become so by reason of natural advantages—a fact which does not seem to be fully realised by the promoters of "garden cities" and the like projects.

It is difficult to say which of the factors enumerated—the supply of raw materials, power, transport or competent

labour—is the most important; but undoubtedly the most favourable position is that in which all are combined. That is pre-eminently the position enjoyed by the great manufacturing districts of England. Nor is their superiority necessarily threatened by the disappearance of some of their original advantages. If the primary causes of industrial development be examined a little more closely it will be noted that a change is in progress, and that the first two—proximity to raw materials and power—tend to diminish in influence and to be replaced by the growth of transport. Ocean carriage, in particular, constantly increases in importance and takes the place of local supplies, which may become inadequate, diminished or exhausted. This fact, which has already exercised a potent influence on the commercial as well as on the industrial development of England, will probably be still more potent in the future. I cannot here pursue the economic aspects of the subject, though much tempted to do so, for some economists appear to set the carrying trade of the country over against the manufacturing interest, whereas the two are directly dependent on each other and will become increasingly so. What I am at present concerned to point out is that the accessibility of our industrial districts to ocean transport, by reason of the small size and island position of the country, is an advantage of permanent and increasing value which might even make good the exhaustion of coal, as it already has that of iron, and as land transport has made good the local exhaustion of both. I have already mentioned the Potteries. Another of the great industrial districts of England, to be presently described, is the ring of metal-manufacturing towns round that singular area known as the Black Country in South Staffordshire. The original causes of their development were the proximity of raw material—iron and coal—in that area. Now it stands desolate, worked-out; but the towns around it and once dependent on it remain and grow. They get their supplies elsewhere.

Originally, I suppose, the most essential condition determining the seat of industries was the presence of water. It supplied power, transport, and, to a certain extent, raw materials, as for the washing and other treatment of textile

fibres. Accordingly we find that the oldest established industrial centres are always situated on rivers or streams, and generally in a more or less hilly neighbourhood, which is often the seat of mineral supplies, as well as of clean running water. Later, coal became the chief source of power. The combination of water, coal and iron together is very strong, and if accessibility be added, it becomes irresistible. But even this combination does not exhaust the natural advantages of that wonderful industrial region in the North of England, the like of which the world has never seen and is not likely to see elsewhere. For it possesses certain atmospheric qualities which greatly favour the manufacture, both of cotton and of wool in special respects, and conduce generally to energy and vigour, both of mind and body. No wonder that with the development of steam power and machinery it became the "workshop of the world" and still remains unapproached. There are regions in the continents of Europe and America and some in other parts of Great Britain which are sufficiently remarkable; but none can compare with the area, made up of contiguous portions of the counties of Lancashire and Yorkshire, that I am about to describe. No one, who has not travelled through and through it and studied its towns and villages, can have any conception of what the modern development of industry means.

Take a map of England and put your finger on Sheffield; then draw a line due north to Leeds and due west to Warrington; join these two by parallel lines which meet somewhere near Preston. The line from Leeds to Preston should curve a little to the north, so as to include Keighley, but otherwise you get a perfect parallelogram, containing something like 1,500 square miles. That is the great workshop of the world. It is 1,500 square miles of factories, mills and mines, and in an inner area lying between Bradford and Manchester they are practically solid. It is by nature a beautiful country, a land of hills and streams, of heath and wood. Some sections of it are still beautiful. On the Yorkshire side the moors come close up to the big towns. A few miles out of Sheffield, or Barnsley or Leeds, lie great tracts of open moorland carrying the finest grouse shooting in the world, and the pit villages

are often set amid charming surroundings. The valleys of the Wharfe and the Aire provide Bradford with romantic suburbs, which show that it was once itself a romantic spot. Adjoining the Yorkshire border near Sheffield, and within our parallelogram, is the Peak district of Derbyshire, with some of the finest scenery in England. The Lancashire side is less fortunate, and towards Manchester it becomes frankly hideous; but elsewhere it is not devoid of hill and moor and meadow, and some of the big manufacturing towns have natural situations as charming as those of Yorkshire, though in a somewhat less romantic style. Taken as a whole, this manufacturing district is not only by far the busiest in the world, but also the most naturally beautiful of all large industrial areas.

I do not know precisely what the total population is. That of Lancashire is (1901) 4,406,787, and that of the West Riding of Yorkshire, 2,746,867; making together, 7,153,654, which far exceeds that of any of the American States except New York, and nearly half the population of New York State is in New York city. The particular area defined, however, does not include the whole of Lancashire and the West Riding. I estimate its population to be somewhat over 5,000,000, of which rather more than half is on the Lancashire side. This statement probably gives very little idea of the dense aggregation of people. It can be better realised by scanning the following list of the principal towns comprised within the area, which is only fifty miles long and less than thirty miles wide:—

Town.		Population (1901).
Manchester	Lancashire	543,872
Salford	Lancashire	220,957
Bolton	Lancashire	168,215
Oldham	Lancashire	137,246
Blackburn	Lancashire	127,626
Preston	Lancashire	112,989
Leeds	Yorkshire	428,968
Sheffield	Yorkshire	380,793
Bradford	Yorkshire	279,767
Halifax	Yorkshire	104,936

Here are ten towns, each with upwards of 100,000 inhabitants, and containing an aggregate of 2,505,369 or an

average of more than 250,000 a-piece. Half the population of the entire area is compressed into these ten great centres. The remaining half is distributed in a large number of others, some of which are but little smaller, and in innumerable villages scattered amongst them. There are Burnley (97,043), Huddersfield (95,097), Rochdale (83,114), Stockport (78,897), Warrington (64,242), Wigan (60,764), Bury (58,029), Keighley (41,564), Wakefield (41,413), with Stalybridge, Dewsbury, Shipley, Todmorden, and many more which it would be tedious to enumerate. Along the principal railway lines they are practically continuous. There is nothing approaching to it even in Saxony, where the towns are separated by long stretches of pure country. It may not be anything to be proud of; I am not sure whether it is or not, but the fact is worth noting that everybody is proud of it. We hear much talk of "back to the land," "garden cities," "rural settlements," "the simple life," and so on; but if we look at the facts we see that in every country nothing excites more popular pride and satisfaction than contemplating the growth of cities and the aggregation of people in them. The extension of the area covered by bricks and mortar and the increased number of people massed in them is always proudly quoted as the first and incontrovertible proof of local progress. Everybody does it. I daresay Mr. Ruskin would have done it himself if he had had to make a speech on the opening of a municipal picture gallery. And it is undeniably true that if there were no towns there would be no public picture galleries or similar encouragements of fine art. Venice and Florence are towns, created mainly by commerce, and so was Athens itself. Sheffield, one of the most flagrant examples of all, is actually the home of the Ruskin Museum. So strong is this feeling that I remember one of those titled ladies who when tired of gaiety find occupation in projects of social "reform," expatiating in consecutive sentences on the benefits of rural life and on the satisfactory progress that the rural communities in which she was interested were making towards growing into towns.

In this corner of England, made up of sections of Lancashire and Yorkshire, the process may be seen in all

stages, from the mighty roaring mart of Manchester down to the tiny village which has been invaded by a single mill or has grown up around it. Those who cry "back to the land" and advocate the removal of industries to the country do not seem to be aware that it is perpetually going on. Factories are constantly being put down in country places. All about the great towns I have enumerated are such places; quiet and sometimes charming villages, where there is a mill or two and hard by a few rows of entirely excellent cottages for the work-people, co-operative stores, a reading-room, and the like, with a minimum of public-house accommodation. Almost ideal in a plain way. And what happens? The ideal village makes all the haste it can to grow into a town and to imitate other towns, and everybody congratulates it on the rapidity of its progress. Eventually we have the familiar tale: So many years ago this great city was an insignificant village with a few hundred inhabitants; now it has so many hundreds of thousands and covers so many square miles. Such details are recited with profound satisfaction, and the new town hall, which has cost a fabulous sum, is opened by royalty with all the pomp that can be raised for the occasion and amid every sign of popular rejoicing. Everywhere and always it has been the same, from Babylon to Chicago; mankind loves the town, whatever sages may say, and contemplates it with unfailing delight. On sages themselves it exercises an irresistible attraction, and they generally spend the greater part of their time in the middle of it. Judged by this standard Lancashire and Yorkshire have much reason for self-congratulation. Nowhere has the human race piled up so many great towns within the same area. They are worth some study. But in spite of the pride inspired by their magnitude, they have a bad name and are shunned. No one goes near them save for business or to visit friends, and those who go for business stay as short a time as possible. The guide-books dismiss them with the scantiest notice, and the few novelists who lay their scenes in them paint them in the gloomiest colours. Well, they are not health resorts or storehouses of art, or rich in scenery or architecture. With the exception of a few small places, such as Oxford, Cheltenham,

Leamington, and some on the sea-coast, English towns are sombre and dingy; and the manufacturing ones are for the most part more sombre and dingy than the rest. They are far more so than those on the continent of Europe or even in America, with certain notable exceptions. Nor have they much historical interest in the ordinary sense. But they have an overwhelming human interest incomparably more actual and vivid than that of the sight-seeing round, and, in a sense, more satisfying, because more defined and intelligible, than that of the huge kaleidoscope presented by a great modern capital. For reasons already given the capitals are not included in my survey, but some note must be taken of them, if only to indicate how far they are representative or the reverse, and this will be the most convenient place for the few remarks I have to make about London.

London.

The great mistake that strangers make in every country is to generalise from too small an experience and in particular to judge the rest from the capital. Capitals vary; some are much more representative than others, but it is never safe to take features observed in the capital as typical of the rest, and sometimes it is wholly misleading. But the mistake is constantly made, because many travellers never see anything but the capital. Americans often complain that Europeans judge them erroneously from New York, but they make the same mistake themselves on this side. I agree with them that New York does not fairly represent either the United States or the American people. Neither does London represent the United Kingdom, much less the British Empire. It does not even represent England. Indeed, if the native white population of the United States be taken, I am inclined to think that New York people and New York ways have more in common with the rest than Londoners and London ways have with rural England and the industrial North. The people appear to be of different breeds, with not less variation in temperament, character and custom than in manner of speech. That truly representative type of Londoner to whom the

generic name of 'Arry has been given is not met with anywhere else. He gets his 'Arryness from London, and I regret to say that he is the most offensive creature on the face of the earth, except a certain type of Prussian officer. It is his delight, one might almost say his occupation, to be offensive; if he were not offensive he would not be 'Arry. He is the only person who takes it for granted that anything with which he is not familiar is necessarily ridiculous, and who freely expresses his ridicule. When he leaves home he ridicules everything he sees, particularly in a foreign country; when he encounters anything unfamiliar, such as a person clothed in a foreign or even a native rural garb, in his own streets, he treats it solely as an object of ridicule. He has nothing to learn save what can be learnt in London from his own familiar sources of information. His satisfaction with himself and his surroundings may not really be greater than that of the corresponding American, who not only believes his own country to be far ahead of all others in everything but is firmly convinced that the unfortunate inhabitants of other lands neither know nor can do anything. But the American counterpart of 'Arry is more amusing than offensive with his child-like self-glorification; he pities other people, and rather gravely tries to enlighten them; he does not lay himself out to wound their feelings with boisterous ridicule. That amiable habit is peculiar to 'Arry, and it does not make a favourable impression on strangers. It may be said that 'Arry is an excrescence, but I am afraid that he is a very large and deeply-seated excrescence. To tell the truth London is pervaded with 'Arryness, modified and refined according to circumstances, but in essence the same quality. And I do not find it elsewhere.

There is much else that is unfortunately peculiar in London. When the number of persons aggregated together in one spot passes a certain point, some of the problems of social life become so aggravated that they differ not only in degree but in kind. The ordinary limits of time and space are touched, and extraordinary efforts must be made to meet the difficulties that arise. That is the case with housing and locomotion which are closely associated: the conditions that occur in London are not found in any other

English town. Nowhere are there such vast areas of grimy squalor, nowhere is locomotion so difficult. On the other hand, London has the best water supply of any great city in the world, and the best service of isolation for infectious disease (not even excepting Berlin); its public parks, play-grounds, squares, gardens and open spaces are unique for number, variety, verdure, extent, distribution and accessibility; its sanitation is extremely good and its death-rate very low; its police force cannot be matched. Its main thoroughfares are mean and hopelessly disfigured by advertising signs and letters plastered over the houses; nevertheless it contains a larger number of fine, interesting and historical buildings than any town out of Italy. But above all other distinctive features London is an *omnium gatherum* that has no rival. It is the only capital that is at once the seat of government and of justice, the residence of the Court, the headquarters of all the institutions of State and of the Church, a great port, a great manufacturing place, the centre of intelligence, the centre of trade and finance, the centre of crime and vice, the centre of fashion and pleasure. All roads lead to London and everybody comes there; it is the goal of ambition and the refuge of the outcast. No one can judge England without London; but let no one judge England from it, and least of all the large industrial towns of the North.

To return to them, I think that pride of place must be given to Lancashire, which stands first among the counties of England both in textiles and in engineering and machinery, and also in the production of paper and glass.

The Lancashire Towns.

Manchester.

Manchester is the chief of them, but I am going to say little about it as a town, not because it is not worth more but because it is less suitable to my purpose than others, which are of a more purely industrial type. Manchester is undeniably a manufacturing town. It is the seat of many notable "engineering" works—the term is commonly applied to the manufacture of machines of all kinds and of

many other mechanical appliances as well as engines—including one of the largest electrical machinery works in the country. This is the British Westinghouse Company, an American concern. The works are new, on the same scale and the same plan as the Westinghouse Works in America, and are unsurpassed as specimens of modern workshops and workshop arrangement. The principal shop is 300 yards long and 150 yards wide, and a model for space, light, order and appointments. Then Manchester is famous for heavy machine tools, hydraulic presses and similar appliances, and for cotton machinery of all kinds. It also possesses many cotton mills and some of the finest spinning is done there. At the present time Manchester and Salford have about 2,750,000 spindles and 23,000 looms. Nevertheless the manufacturing element is completely overshadowed by the commercial. Manchester is to-day primarily a great business place; it is the central mart for the Lancashire manufactures and it draws to itself the trading element of the neighbouring towns, which have consequently assumed a purely industrial character. I do not know of anything quite like this, though the situation of Boston in relation to the manufacturing towns of Massachusetts somewhat resembles it. But then Boston is a port, whereas Manchester, in spite of the canal, can hardly claim that character. It is a place for buying and selling, and since Lancashire sends its wares all over the world (which Massachusetts does not), hither come buyers from all the nations. They do their business in Manchester and there the goods are warehoused.

The town has no doubt gradually acquired this character through its convenient situation and the development of transport facilities. It has an industrial history of great antiquity and is said to have been the seat of woollen manufactures before the time of the Romans, who established a station here, as the name "Manchester" implies. Wool is the oldest of all the textile industries, and several of the Lancashire towns were famous for it many centuries before the introduction of cotton, which came from the Netherlands in the seventeenth century. The most ancient seats of textile products are always found on the banks of small rivers, which furnish the means of washing, bleaching

and dyeing the fibres or fabrics; and no doubt Manchester owed its industrial beginnings to the unfortunate and ill-used river Irwell, which divides it from Salford. Its position was improved by Roman roads and its textiles by Roman skill. They continued to flourish in the succeeding centuries, and are mentioned at various periods in English history. As a textile centre it attracted the refugees driven from the Continent at different periods, and in turn derived an impetus from their skill and knowledge, notably in the use of cotton. It was not, however, until the latter part of the eighteenth century that the modern development of the old industrial centre began in earnest and transformed it in a comparatively short time out of all recognition. This was due to a remarkable series of changes, inventions and enterprises, which came hard on the top of one another.

The first in point of time was the construction by Brindley, for the Duke of Bridgewater, of the system of canals which gave Manchester cheap carriage of coal and cheap transport to Liverpool and elsewhere. The first part of it was opened in 1761, and was the beginning of that extensive system of inland navigation which did so much to promote commercial development by improving transit before the advent of steam locomotion and the railway. This enterprise was directly connected with Manchester, for it was undertaken with the primary object of bringing coal from the duke's collieries at Worsley. The same date marked the inception of mechanical invention on an unprecedented scale and with unprecedented results. There is a great temptation to linger on this singular period in the history of mankind and to speculate on the causes of the outburst of inventive genius by which it was marked above all others. For genius it was, in the strict sense of that word, meaning original mental productivity, untaught, unschooled, coming whence and how we know not. It owed practically nothing to science and very little to education. It sprang from the soil, and that soil was pre-eminently, though not exclusively, the north of England. Brindley came from the peak district of Derbyshire, which falls within our industrial area. Of lowly, rustic origin he became a millwright's apprentice, and from boyhood displayed a mechanical and engineering genius of the purest

type and of the widest range. Hargreaves, the first of the long line of inventors of modern textile machinery, was an illiterate Lancashire weaver. He invented the spinning-jenny (1767), and before that (1761) a carding machine on which all subsequent improvements were based. Arkwright, the efficient if not the first inventor of the roller spinning-frame (1769) was likewise a Lancashire man of equally humble origin. Crompton, who invented the spinning-mule (1779), and came from the same neighbourhood as Hargreaves, was the son of a very small farmer. Cartwright, to whom as the inventor of the power loom (1785), the textile industries owe more, perhaps, than to any of them, was a clergyman born in Nottinghamshire; but he, too, received the stimulus to mechanical invention from Manchester and the cotton trade. Henry Cort, who about the same time invented the puddling furnace and the rolling mill, on which the modern iron and steel industries are based, was another uneducated Lancastrian. The self-acting mule which came later (1830) was the invention of Mr. Roberts, of Manchester. It is needless to insist on the importance of steam power in developing the use of all these machines. Its successful application to textile processes was gradually accomplished by many hands; but the chief credit again belongs to the Manchester district. Power looms were first set up successfully on a large scale at Pollokshaws in Scotland, but in 1835 Lancashire and Cheshire had four-fifths of the whole number in the United Kingdom.

The effect of this extraordinary series of inventions is seen in the rapid and enormous increase in the imports of cotton, which had been virtually stationary for a century. A few dates and figures will best exhibit the change effected:—

Year.	Cotton Imported.
1697	1,976,359 lb.
1764	3,870,392 „
1790	31,447,605 „
1800	56,010,732 „
1810	132,488,935 „
1820	151,672,655 „
1830	263,961,452 „

This immense expansion was largely assisted by the development of the cotton culture in the United States

which followed the invention of the mechanical saw-gin by Eli Whitney in 1794. The production, which had been only 2,000,000 lb. in 1791, rose in successive decades to 48,000,000, 80,000,000, 180,000,000 and 385,000,000 ; and Great Britain, which in 1790 had obtained none of its cotton supply from the United States, took a constantly increasing proportion from that source. The fact is interesting at the present time, when attention is turned to alternative sources of supply, particularly within the Empire. It appears that in the year 1786 we imported about 20,000,000 lb., of which one-third came from our West Indian colonies, another third from West Indian colonies belonging to other nations, and the remainder from Brazil and the Levant.

The last great mechanical invention which contributed to the development of Lancashire, and in particular to the evolution of Manchester as its trading centre, was the steam locomotive and the railway. The town became a convenient market and exchange, easily reached from every direction, and the best meeting-place for manufacturers from the neighbouring towns, which accordingly transferred their warehouse business thither. The further factors in its evolution are, of course, ocean steam transport and contiguity to the sea.

This much explanation is necessary to give a clear idea of the growth of industrial Lancashire and the part played by the chief town. It is a very remarkable story, without parallel in the industrial history of other countries. By dint of native inventiveness, energy and enterprise, assisted by certain natural advantages, Lancashire became purveyor to the world of the most widely used and generally useful of all the textiles, although so far from the sources of the raw material. India is the original seat of cotton manufactures, and, so long as the industry depended on hand processes, Lancashire was quite unable to compete with the age-long traditional skill of the Indian hand-workers in producing the finer fabrics. Machinery changed all that, and England became an exporter of muslins, calicoes and other cotton goods to India, and to all other countries. The supremacy then won has never been lost, though it has been considerably diminished in recent years by the gradual acquisition of skill in other countries, and it is more keenly

contested year by year. Some summary figures will show the relative position of the chief manufacturing countries according to the latest information :— [1]

Country.	Mills.	Spindles in Millions.	Looms in Thousands.	Consumption in thousands of Bales.	Hands employed.
Great Britain	2,077	50	720	3,270	530,000
U.S.A. . .	1,151	21	488	4,164	307,000
Germany .	390	8½	212	1,580	350,000
Russia . .	304	7	157	1,290	355,000
France . .	420	6	106	840	90,000
India . .	192	5	42½	1,765	181,000
Italy . .	500	2½	110	560	130,000
Austria . .	125	3¼	110	600	100,000

It will be noted that the supremacy of Great Britain is much more marked in spinning than in weaving. The number of spindles exceeds those of the United States, Germany, France, Russia, Italy and Austria put together; and nine-tenths of the 50,000,000 spindles are in Lancashire.

There are other manufactures of some note in the county—paper, glass, hats and watches, or parts of watches—associated with particular localities ; but they are quite insignificant compared with cotton and cotton machinery. The latter is becoming almost more important than the cotton itself. Wherever textile industries flourish machinery works grow up, and those of Lancashire are pre-eminent. The makers of machinery do more than supply the mills, they build them ; many of the newest mills furnished with the very latest machinery are owned by them. The fact testifies to the determination of the district to hold its own and adds stability to the trade, for as other countries develop the manufacture of cotton and compete in the production of yarn and cloth they become customers for machinery. After a time, no doubt, they begin to manufacture the latter also for themselves, and as they become self-sufficing they shut out the English machinery as well as the English goods. That is already happening in the United States and Germany, but other markets are opened elsewhere, and even in the States and Germany the best spinning machinery still comes from

[1] *Hand-book* for 1903, Comtelburo, Ltd.

Lancashire. As a general exporter of machinery of all kinds for the manufacture of cotton it remains without a serious rival. That is a cheerful reflection; but in view of the downfall of other English industries once equally supreme, and of the growing success of other countries in supplying their own textile machinery, it would be folly to expect this state of things to last indefinitely. No one can look around and note the progress, now steady and now swift, of competitors, along the track once trodden alone by England, without misgiving for the future of Lancashire, with that great population dependent on a single branch of industry; for if cotton and cotton machinery be taken away it is undone.

Meanwhile it flourishes exceedingly, and one aspect of its success, not to be missed, is presented by the great city of Manchester, to which I return. Together with Salford it has a population of considerably over three-quarters of a million. The two were once administratively and still are actually one, and without intending any slight to Salford we may perhaps, for convenience' sake, be allowed to speak of them together under the single name.

Strangers do not speak well of Manchester, and that is not surprising. It is not beautiful by nature or by art; it is wet and smoky. People say it is the smokiest town in England, but perhaps they do not know Sheffield or Gateshead. Still Manchester *is* very smoky and it is certainly very wet; the rainfall is far above that of London. Put the two things together and very likely the Manchester fogs are as bad as the London fogs; they may even be worse. The aspect of the place, it must be admitted, is gloomy and dull, and strangers never like those qualities; but residents mind them less, and the Manchester people love and are proud of their dull and gloomy city. The reason is not far to seek. What most human beings like is companionship, life, things going on, the presence and stir and bustle of other human beings. That is why they love the town, a point on which I shall have something more to say presently. They get these things in Manchester to a pre-eminent degree. In the main arteries where the tide of life runs at the full, it runs with a roar and a stir and a bustle which are not excelled by any other

town, not even by New York or London itself. And yet the place is not too large for corporate life and a sense of citizenship. Then the principal streets are well built and well kept, fairly spacious and handsome, and the shops are very good. There is a massive effect about the centre of Manchester which is not equalled by any other provincial town. The signs of trade are over it all—movement, wealth and power. The streets are thronged with loaded drays rumbling along and impeding the quicker traffic to such an extent that I have counted twenty-eight electric trams all blocked in a heap. Many of the side streets consist entirely of tall warehouses, with bales swinging overhead in mid-air, ascending or descending all day long between the upper floors and the drays which stand lining the roadway below. This is the business of Manchester; the factory element is in the background. And there are the other accompaniments of trade—misery, squalor and vice. These are always found in great trading centres. I suppose that the handling of goods offers employment to unskilled labour and attracts incapables and failures. Also where there is much wealth there is much to be picked up casually from charity. Vice always abounds in such places. Buyers and sellers come from everywhere, strangers with money and leisure when business is over but no friends or anywhere to go to. The hotels are full of them, and they want amusement. The amount of visible drunkenness in Manchester is very great. I have witnessed a painful scene quite early in the day and in one of the main streets between a drunken woman and her sobbing daughter —a tidy, well-dressed girl—who was trying to prevent her from entering a public-house with desperate earnestness, and in an agony of love and fear which rose far superior to the shame of publicity. It attracted some attention, but not much. The girl triumphed at length, aided by a workman and by fear of the law in the person of a constable, who gruffly bade the woman go home. It was the kindest and most effective thing he could do. They were all kind.

I am afraid this sort of thing is typical of England, and undeniably, Manchester is very English. But the features I have mentioned—the business and bustle, the squalor and

vice—are not all typical of the real industrial towns, which have neither the wealth and show nor the degradation of the trading centre. It is necessary to insist very strongly on the distinction, as a most erroneous notion of our manufacturing towns and industrial population is gathered from the trading places—London, Manchester, Glasgow, Liverpool, and the rest—which are far better known than such towns as Bolton, Oldham, Bradford and Halifax. Pauperism, vice and misery are much more rife in the former. The difference can be shown arithmetically by comparing the expenditure on pauperism in the two classes of towns, and to make the comparison entirely valid we will take the Lancashire towns only. The trading centres are Manchester and Liverpool; the chief manufacturing towns are Bolton, Oldham, Blackburn and Preston.

Expenditure on Pauperism per head of Population (1902).

	s.	d.		s.	d.
Manchester	6	9	Bolton	2	2½
Liverpool	7	5½	Oldham	1	10½
			Blackburn	1	11
			Preston	1	6½

These figures eloquently demonstrate the fallacy of generalising from trading centres and assuming that the conditions which prevail there are common to the industrial population. They reflect a real difference, which is visible and palpable. I have dwelt upon Manchester for the purpose of emphasising the distinction, and for the same reason I shall not enter into further details regarding the conditions of life there, but will pass on at once to the manufacturing towns.

Bolton.

Next to Manchester and Salford, Bolton is the largest town in the cotton district, and it is quite typical. There is no better field for the study of industrial conditions in England unless it be Oldham. It lies about a dozen miles to the north-west of Manchester in a region of considerable natural charm. It is a coal country; one is never out of sight of coal or factory chimneys all the way from Manchester, and of course the one accounts for the other. The

old name, Bolton-le-Moors, which appears to have been dropped as the town grew into greater importance than all the other Boltons, suggests an open, hilly country ; and in point of fact there are veritable moors at no great distance. At Rivington Pike, which is only half a dozen miles away, the hills rise to nearly 1,200 feet. It is the greatest mistake to suppose that these manufacturing towns are devoid of charm or that the factories totally destroy all the natural features of the locality. Bolton, with its undulating ground, little river and charming parks, is far pleasanter to look upon than the great bare and glaring watering-places on the south coast in which so many people find delight. Of course the factories are there, and they are not objects of beauty, though less repellent than they are commonly represented to be. I shall have more to say about them and the town presently after noting some points in the rise and development of the manufactures.

The story of Bolton has already been implicitly told in the account given of the origin and growth of the cotton industry. It is itself an old seat of textile manufactures, probably going back to the time of the Romans. My own belief is that the Romans established manufactures in suitable places wherever they went, and that all the oldest seats of industry, both of metals and of textiles, in Europe were started or developed by them. Bolton was a suitable place, like Manchester. It had the necessary little river and grazing for sheep in the neighbourhood. Those Flemish weavers imported by Edward III., who are always cropping up in the early history of our manufactures, were sent to Bolton among other places ; and of course they were sent there because it was a place where weaving was already carried on, but in a more primitive fashion. The foreigners were encouraged by the sagacious sovereign in order to improve the native methods, and therefore they were despatched to the localities where they would have the aptest pupils. Be that as it may, the place was already noted for its woollen products in the reign of Richard I., when an aulneger or official measurer of cloth by the ell was appointed for Bolton. The Flemings came there in 1337, and in later times refugees from the Netherlands and the Rhine, practising the same art, found their way to Bolton

as one of the places where they could ply their trade and earn a living. As I have said, they brought the use of cotton and taught the manufacture of fustians, a fabric made of mixed wool and cotton and originally derived from Spain. Bolton became famous for fustians and for coal, the use of which is mentioned as early as 1540. The manufactured goods were sold in the town, which had its own markets and conducted its own trade on the spot. The old picturesque warehouses, where business was transacted, have all disappeared, but some still existed down to fifty or sixty years ago. They consisted of three stories. The lowest formed the warehouse; the second was the place of business, it had shops and salerooms behind with a gallery projecting over the street in front and covered overhead by the top story which was thrown out and held up by pillars. With the removal of the market to Manchester, which followed the development of transport, the character of the town changed and the old picturesque element gradually vanished.

In the evolution of the cotton industry Bolton played a conspicuous part. Crompton was a native of the town and Arkwright lived there for some time, but the opposition to machinery displayed by the operatives, who were numerous and therefore strong, effectually delayed the adoption of the Bolton inventions in Bolton itself until they had been brought into use elsewhere, and the fight against the inevitable, which has always been waged with more dogged determination in England than anywhere else, was perforce abandoned for the time being. Then the cotton manufacture grew rapidly and the town with it. Steam mills, filled with machinery, sprang up and multiplied, and were followed by foundries and machine shops. The population of Great and Little Bolton, which had been 5,339 in 1776, ran up to 17,416 in 1801, and to 41,195 in 1831. Out of 8,209 families at that date, 7,288 were engaged in "trade, manufactures and handicrafts". At the last census, seventy years later, the population of the borough was 168,215; and there were then, according to the local directory, 206 mills, with 6,250,000 spindles and 38,000 looms; also 35 bleaching and dyeing works, 22 machinery works and 28 iron and steel works. Some of

the latter must be small repairing shops, but there are two very large machinery and engineering works—Dobson and Barlow, who employ about 5,000 men, and Musgraves.

The speciality of Bolton is fine spinning, and the cotton used is largely Egyptian, which has the advantage of a long staple. The fineness of cotton yarn is reckoned by the length of thread contained in a "hank" of spun material weighing one pound, and is indicated by numbers technically called "counts". The unit is 840 yards. Thus a hank or pound of yarn, 840 yards long, is No. 1 count, one of double that length is No. 2, one of ten times 840 yards is No. 10, and so on. The greatest degree of fineness to which spinning has been carried is said to be 350 counts, such is the extreme tenuity of which the cotton fibre is capable. One pound of such yarn would reach 167 miles. In actual manufacture "low" counts usually run from 12 to 30, "medium" to 50, "high" to 100 or more, and "very high" to 250. It is in the production of the finer yarns that Lancashire chiefly maintains its superiority over other countries in spinning. This is partly due to the superior skill of the workmen, partly to machinery and partly to climate. In Germany they have not yet succeeded in spinning high counts, though they are gradually improving; in the United States at least two mills at New Bedford are successfully spinning very high counts, but it is with workmen and machinery from Lancashire. Very fine spinning is done on self-actor mules, and in the manufacture of these machines the Lancashire makers are still unrivalled. With regard to climate, fine spinning requires a certain degree of dampness in the atmosphere, and this is said to prevail in a particular degree at Bolton, which has led to the specialisation of the fine spinning industry there. New Bedford, which lies on the coast of Massachusetts, is said to possess the same atmospheric quality in some degree. To a considerable extent it can be artificially imitated by the use of mechanical sprinklers, which scatter a fine spray into the air of the room. They are universally used in Germany, and German experts inform me that they can successfully cope with the atmospheric difficulty in this way. If that be so, they have only to acquire the requisite skill in order to compete, and they are steadily aiming at it. The

machinery they can procure from England until they are able to produce their own, which they will certainly do at no distant date. At present the machines taught in their technical schools, both for carding and spinning, are by Lancashire makers, such as Howard and Bullough (Accrington), Platt (Oldham), Asa Lees (Oldham), Dobson and Barlow (Bolton), Hetherington (Manchester), and Threlfall (Manchester); but for other processes, and notably for weaving, they make their own. America seems to me to be following the same course, and in some respects to have advanced further. The machinery makers have greatly developed the use of the ring spinning-frame, and Lancashire spinners in the States inform me that the American ring spinning-frames are lighter and superior to the English ones. The Northrop automatic loom has also put them at a temporary advantage in regard to the production of cheap cotton goods, particularly in the Southern States.

I return to these points later in the chapter on "Factory Premises and Plant". They are merely mentioned here as signs of the times bearing on the Lancashire trade. They go to show that even Bolton, with all its advantages, cannot rely indefinitely on its present superiority in the production of fine materials. The general course of competition in newly developed manufacturing countries is to begin with the simpler and cheaper products and gradually to work up to the finer. That is undoubtedly happening in the cotton industry. Up to now Bolton is able to defy competition, and a striking proof of it came under my notice. In the looms of Barlow & Jones I saw being manufactured the cotton outfit for the very newest and largest of New York hotels. The maintenance of this superiority will depend on the amount of energy put into the trade, and happily there is every sign that it will not be lacking. The manufacturers fully recognise the necessity of keeping abreast of the times, and nowhere are the factories more up to the mark.

The town wears an air of marked and general prosperity. It has been selected by more than one writer for description as a specimen of the miserable conditions of life prevailing in the cotton country, but whatever may have once been the case Bolton is a cheerful place to-day. I

have said that the mills are not things of beauty, but they are cheerful. In Lancashire they are built of bright red brick and have usually four stories. They are larger than the German mills, but very much smaller than many of those in America, which nearly always combine spinning and weaving, whereas in Lancashire weaving is carried on in sheds on the ground and lighted from the roof, as in Germany. The spinning mills are separate and a great many firms carry on that business alone. The newer mills look spick and span, and are, as a matter of fact, very clean and well appointed, though there is no attempt to give them any sort of decorative appearance. The chimneys not infrequently bear the name of the mill in tall white letters. When lighted after dark the long rows of windows look very bright and cheery. A large Lancashire mill will run as many as 90,000 spindles, but I have seen one in South Carolina which has 100,000 spindles and 2,400 looms under one roof

The interior of one of these great buildings presents an animated scene which has nothing dreadful about it except to those who think it dreadful that anybody should have to work at all. The operatives do not think so. They are a cheerful race, and, provided they have good employment and are fairly treated, they enjoy life incomparably more than those who pity them. In Bolton it is only fair to say that the trade unions, which are extremely strong and well organised, give the employers a very good name. "We mustn't make any complaints against the employers," said one official to me; "they are unanimous and always willing to investigate complaints, whether about sanitary matters or anything else." I shall have more to say on this head in dealing with trade unions, but I quote the opinion here to show that I have some warrant for taking a less gloomy view of life in a cotton town than conventional denunciations of the "factory system" may have led the reader to expect. I say the people in the mill are cheerful and have no reason to be otherwise. I have repeatedly heard the women singing, even amid the deafening roar of the weaving shed, in which conversation is impossible. The spinning mill is less noisy though the incessant clatter of machinery there, too, is a little disconcerting to unaccus-

tomed cars. The atmosphere is nowhere bad, but in the spinning-room it is apt to get excessively hot. That is the choice of the spinners who can make better work in a high temperature. The self-actor minders work stripped to the waist and with bare feet. Theirs is the most skilled and the hardest work, and they address themselves to it with an intentness and an absorption which are not surpassed by any workmen anywhere. The slackness with which English workmen in some trades are justly charged cannot be alleged against the Lancashire spinners, who are proud of their skill and with good reason. The work of the mule spinner is to mind the self-acting mule, and it demands all his attention to see to the threads and join those which may break. His earnings depend on his watchfulness and dexterity. Under the Lancashire system of working a spinner with two "piecers" to help him will mind a pair of frames carrying 2,600 spindles. He walks along them continually as the frames run out and back, instantly perceives a spindle which has stopped and with a rapid motion of the hands picks up the ends and joins them, walking forwards or backwards with the travelling frame as he does so. This is not an easy task; it must be learnt from boyhood. But the earnings are good. Wages are regulated by an agreement between employers and employed, which is modified by mutual consent as occasion arises. I have particulars of twenty-six Bolton spinners. From January to August, 1903, they averaged £2 4s. 6d. a week net, including the Easter and Whitsuntide holidays; the week is fifty-five and a half hours. Seventy years ago the net average earnings of spinners were £1 4s. 8½d. a week.

In the other rooms, in which the preparatory processes are carried on, there is nothing to complain of in the atmosphere save a certain amount of dust in the carding room; nor is the work very exacting. The great evils of excessive dust and floating cotton fibre, which used to come from the raw wool in the first stages of manufacture, are now obviated by improved machinery. The children in the mill look bright and alert, particularly the little boys employed as "doffers," whose task is to take the full rolls of finished yarn or "cops" off the spindles and to put fresh cases in

their place. They take great pride in the speed with which they can get through a row of spindles and race each other to the finish. Few "half-timers" are now employed, but on reaching the age of fourteen boys and girls simply rush into the mill. Boys get 10s. a week, girls 7s. 6d.; women up to 22s. or 23s.; card-room hands from 27s. 3d. to 35s.; weavers from 18s. to 27s. The Factory Commissioners seventy years ago returned the following table of average weekly earnings in a cotton mill:—

Age.	Males.	Females.
	s. d.	*s. d.*
From 9 to 10 . . .	2 9¾	2 11½
„ 10 to 12 . . .	3 8	3 9½
„ 12 to 14 . . .	5 0¼	4 10½
„ 14 to 16 . . .	6 5½	6 4¾
„ 16 to 18 . . .	8 2½	8 0½
„ 18 to 21 . . .	10 4	8 11
„ 21 and upwards . .	22 5¾	9 6½

The working week was then considerably over sixty hours, but the pace at which the machinery runs is much greater now and the intensity of work has increased with it. Even within the last few years the pace has been much accelerated. Workmen not yet of middle age tell me that when they began a man could often get a rest and even an occasional nap. Now attention is always at the stretch while the machinery runs, and the great complaint made by the operatives is that it often runs overtime in the meal intervals. They say that some mill owners "steal" three or four minutes here and there in the breakfast and dinner hours, amounting to ninety or a hundred minutes in the week.

In Bolton the mills are widely scattered round about the town, but are not far from the dwellings of the workers who, for the most part, go home to dinner. The development of the electric tramway system has greatly improved the facilities for getting to and from work. Their homes are comfortable—I may say very comfortable. As in nearly all our towns, except the inner parts of London, the people are housed in separate cottages, which generally consist of two stories and contain four rooms—a kitchen and front room on the ground floor and two bedrooms upstairs. Rents are 4s. to 5s. 6d. a week. The latter are for

new houses, often provided with hot water. A large number of workmen own their houses, through the assistance of the co-operative society, which is here very strong and flourishing. The striking thing about these industrial towns is the absence of display on the one hand and of squalor on the other. They exhibit a general level of comfort, neither rising to luxury nor sinking to misery, which entirely differentiates them not only from the great cities but from all towns of a more mixed character. Neither Mr. Booth's investigations into the conditions of life in London nor Mr. Rowntree's analysis of York can be applied by analogy to manufacturing towns such as Bolton. It is a favourable specimen, I admit, but none the less quite typical. I am not speaking of show places or fancy cottages or selected homes, but of streets which can be numbered by hundreds and houses by thousands. Of course in a town of the size of Bolton, poverty, misfortune, illness, vice and dirt occur; but the proportion of them is surprisingly small; they need a good deal of looking for. On the other hand the evidences of a decent standard of living meet the eye at every turn. The houses are tidy and tidily kept. The people respect themselves and like to have things nice about them in a plain way. The contrary is quite an exception. Clean curtains are a point of pride, and decent clothes for the school children. These matters are worth noticing. Little things lie at the springs of human action, and if one traces events back far enough one may often find the real cause of a strike in the fact—so to speak—that No. 30 can afford new curtains and new boots for the children, and No. 29 can not. In these textile towns the family is not dependent solely on its head, other members generally contribute to the exchequer, the aggregate income is good and the standard of comfort relatively high.

To see what the people are like you must observe them not only at work in the mill and at home or going to and from work, but also in their leisure time when they go out to enjoy themselves on Saturday and Sunday. This is the most striking feature of our industrial towns as compared with others. On Saturday afternoon you must go to the football field (in the season) to see the men, and to the markets to see the women. The scenes presented by these

two institutions are remarkable and not to be witnessed in any other country, but they are common to all our manufacturing towns, and are even more striking in Yorkshire than in Lancashire. At the football field there are generally gathered from 10,000 to 20,000 men and lads, nearly all out of the mills and machine shops, tidy, well-dressed and well-behaved. They pay 6d. to go in. There are covered stands at a higher rate, and in inferior matches the entrance is sometimes 3d., but 6d. is the regular gate money. The spectators stand in serried ranks all round the ground and watch the game with intense interest. They keep up an incessant fire of comments and shout at every stroke or point in the play, which lasts an hour and a half. No better opportunity for observing them and their demeanour could be provided if they were paraded for the purpose. Here is the manhood and the youth of factory-land at the end of their week's work. Scan them well and listen to their conversation. Physically, they are not remarkable either way. They are rather short than tall, but for the most part of fairly good build and very well nourished. They wear no signs of excessive toil or unhealthy occupation, nor do they look oppressed and dejected. They are full of animation and a spirit of sturdy independence; satisfied with themselves and their surroundings they neither fear nor envy any one. Somewhat rough and blunt of speech they are yet by no means ill-mannered; the stranger will meet with no discourtesy from them if he shows them none. Keen as they are about the game their language is generally free from the unspeakable obscenities which interlard the conversation of "the working classes"—men, women and children—in other parts of the country and particularly about London. So far as I can ascertain there is little or no betting on football; they enjoy the game as a genuine bit of sport.

While the men are taking their pleasure at the football field the women are taking theirs *more suo* shopping and marketing. All these towns have large covered markets which are open till eleven o'clock on Saturday night. The throng begins to gather in the middle of the afternoon, grows thicker and thicker and never ceases till closing time. The women stream up and down incessantly, eyeing

everything, occasionally examining something more closely and asking a price, but rarely buying, while the dealers vociferously call attention to their wares. This is life—the crowd, the company, the movement, the lights, the choice of purchases, the bargaining—all dear from time immemorial to the feminine soul. All who cry "back to the land!" and so forth go and look at the town and see what the people are doing when they please themselves—the men at the football field, the women at the shops and markets, both later at the music hall. I have spoken above of the factory village—not the exotic but the natural plant; there are plenty in Lancashire near the towns. I was exploring some one day and came across a delightful specimen. Clean, cheerful, bright, with excellent stone cottages at low rents, charming surroundings, co-operative stores, reading-rooms, and so on; only one license to 1,400 inhabitants. A woman was sweeping down the pavement in front of her house and I stopped to talk. She asked me in to see the house. "Yes," she said, "they are very nice houses." "The place seems altogether nice; you are well off here, aren't you?" "Well," she said in a grudging tone, "it is all right in some ways, but it is not like the town; there is no market." "But you have the co-op (colloquial for co-operative store) where you can get everything cheap." "Yes, but it isn't the same as the town and the market. You can't *look and pick*. I would rather be in the town." Nor would she budge from that position. Look and pick! If that is not feminine human nature I do not know what is. Here is the explanation of that curious process of the multiplication of drapers' shops which can be witnessed in every great town and all over London. The big ones breed little ones close by and the little ones grow to big ones. Soon the north side of Oxford Street will be nothing else from the Marble Arch to Oxford Circus or Tottenham Court Road. They are women's shops and they live on "look and pick," as any one may see by noting the customers and their proceedings. I knew very well what the lady meant, because I had carefully observed her class in several towns on as many Saturday evenings. The scene fascainted me and more than once I stayed till closing time. The meat market is the most interesting. Looking and picking go on to the

very end, and then down come the prices and the ladies get what they have marked perhaps hours before, and at their own price. At eight o'clock the salesmen are shouting "All on the board sixpence and eightpence"; at nine it is "All on the board sixpence"; at ten, "All on the board fourpence to sixpence"; and at eleven, "All on the board fourpence," and the board is swept bare.

I have been led somewhat aside from the subject of Bolton, for the foregoing observations have a general application and possess no special relevancy to that town; but it happens to be the first on my list, and as integral features of English industrial life the football field and the market naturally fall into place for description here. With regard to the town itself not much more need be said. It has the dinginess and the prevailing meanness of street architecture which are common to all the large English towns with a few rare exceptions, but it is rather a favourable specimen of its class. Its general aspect is homely and unpretending, the shops moderate; but it has several fairly good churches a stately town hall which cost £170,000 and is well set in a large open space, some charming parks, an excellent public library with a number of branches, two hospitals and other adequate public buildings. Municipal activity is strongly developed. Bolton was one of the first three towns in England (with Manchester and Birmingham) to apply the Municipal Corporation Act of 1836. The local authority runs free libraries, baths, markets, cemeteries, parks, gas works, electrical supply, tramways, sewage works, fever hospital, public and technical schools. The electric tramway system, recently laid down, cost £350,000 and imposed a heavy burden on the finances of the borough. The rates, however, are not high, being in 1902 5s. 8d. in the £ (of which 1s. 4d. poor-rate) on an assessment of two-thirds of the rental. Bolton is not a socialistic place, though a stronghold of trade unionism. The flourishing condition of the trade unions takes visible expression in their conjoint headquarters at Spinners' Hall, where each union has its own ample offices with a large hall for general meetings and social gatherings. Nowhere are these societies better housed.

The place is not particularly smoky, notwithstanding

its 206 factory chimneys in and about the town. From the medical officer's report for 1901, I learn that of the 206 there were 31 practically smokeless and 122 "in a satisfactory condition"; only 46 "emitted black smoke during the year in such quantities as to be a nuisance"; 43 notices were moved to abate, and 16 prosecutions, resulting in 15 convictions with fines, were taken on recurrence of the offence; 22 of the 46 improved so as to come within the legal limit, and 24 did not. This is a fair record of activity and success in smoke abatement. I cannot agree with those who maintain that the suppression of factory smoke is more successfully secured in Germany than in England; their experience must be very limited. In America there is no smoke at all where anthracite is burned; elsewhere there is no attempt at abatement and smoke is a far greater nuisance than anywhere in England.

Bolton is not a slummy town; in 1901 thirty houses were closed, twenty-two demolished and twenty-eight "made fit". There is very little back-to-back property, and the density of population is low. For the whole borough it is only eleven persons to the acre, and in the most crowded district only 69·6. The number of persons to each inhabited house is 4·6. That in a nutshell is the "housing of the working classes" in English industrial towns. They are housed in small cottages spread out over a great extent of ground, and on the whole it is the best housing to be found in any country.

Bolton has an excellent technical school, well appointed, well managed and well attended, in which the local industries are thoroughly taught. The elementary schools provided in 1902 accommodation for 37,253 children, thus divided: Board schools, 13,342; Church of England, 17,759; Roman Catholic, 3,670; Wesleyan, 2,115; others, 367. The great preponderance of denominational schools is a striking feature of the Lancashire towns, which have a strong religious element. The town has upwards of 100 places of worship, of which forty belong to the Church of England.

Bolton is an important railway centre. Lines converge there from Manchester, Bury, Blackburn, Preston, Wigan, Eccles and Liverpool. It is also connected by canal with Manchester and other places. In addition to the railroads,

extensive local intercommunication is provided by electric tramways, which are now established in all our industrial districts and are in process of further development.

The local co-operative society plays a conspicuous part in industrial life at Bolton. It has about 29,000 members (1902), upwards of seventy stores, and a share capital of £618,033. The headquarters is a very large and handsome building. The net profit on the half-year's trading to June, 1902, was £65,430 7s. 3d.; advances to members for building, £31,436; expenditure on education department (library, reading-rooms, evening classes, etc.), £2,070 17s. 7d.

Vital Statistics of Bolton, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births over Deaths.	Deaths under one year per 1,000 born.
168,748	27·5	18·2	9·3	172

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Proceedings for Drunkenness.
167	603	560

Churches (Established).	Theatres.	Newspapers.	Public Libraries.
40	2	5	5

Oldham.

Much that has been said about Bolton holds good of its neighbours and need not be repeated. There is a family likeness between all these towns, but each has special features of its own, and those which distinguish Oldham deserve notice. It is, in truth, a very singular place. If any one asked me to name a town in which to study industrial life in England I should unhesitatingly say Oldham. It is the most complete example of the purely manufacturing town that can be found anywhere. The Commissioner of Labour to the United States, Mr. Carroll D. Wright, whose knowledge of industrial matters is equally accurate and comprehensive, has noted the fact. "The true type," he says, "is Oldham, not Manchester." The population consists entirely of mill and workshop hands with their superior officers, and just so many trades-

men and professional men as are needed to minister to their wants. There seem to be no residents of the leisured class at all, and there is no accommodation whatever for visitors, neither hotels, nor even inns, but only public-houses. At Bolton one finds an inn of the old-fashioned homely kind, which has a "commercial" room and can make up about twenty beds, but Oldham has not even so much as this. They can manage a couple of sleeping places—you can hardly call them bedrooms—at one of the public-houses, and that is all. There is hardly a village in the country which could not do better at a pinch. Indeed I have got a much better bedroom in a village in Somerset which consisted of a farmhouse, three cottages and the public-house. Yet Oldham is a town with a population of nearly 150,000. The explanation, no doubt, lies in its proximity to Manchester. The distance is only six miles and a few minutes by rail. Consequently no one stops there. Externally, life is here of the plainest drab; everything is for use, nothing for ornament. The town appears to have grown simply by the accretion of mills and works with the necessary streets for the accommodation of the workmen; 73 per cent. of the houses contain less than five rooms.

So far as I can ascertain it has no long industrial history. It is the outcome of the great cotton manufacturing enterprise previously described. Before that time it was only a village. The parish church was consecrated in 1406 and is said to have replaced a still older foundation. At the end of the eighteenth century the manufacture of hats was carried on upon a large scale, and one of the principal benefactors of the town, Thomas Henshaw, made a large fortune in this trade, which appears to have died out or gone elsewhere. There are, however, some woollen manufactures, and possibly this was an old industry as at Bolton. Be that as it may, the real evolution of Oldham dates from the cotton machinery era. I imagine it was virtually an off-shoot of Manchester, selected as a site for cotton mills on account of the presence of coal on the spot. Its development was exceedingly rapid. The population which was only a few hundreds in 1760, had risen to 12,000 in 1801, and to 32,000 in 1831. Oldham rivalled Bolton, and they have been rivals ever since. But they specialise in different

directions. The chief business of both is cotton-spinning, but while Bolton is the great centre for fine yarns, Oldham until recently devoted itself to low and medium counts; and these it produces in incredible quantities. According to Worrall's *Directory* there are in this one town nearly 12,500,000 spindles, that is to say, nearly as many as in the whole of the New England States of America, half as many again as in the whole of Germany, twice as many as in France and four times as many as in Austria. The thing is truly colossal and we cannot wonder that the Lancashire folk have been somewhat slow to believe in the ability of other countries to compete. I do not know what is the output of yarn from Oldham, having been unable to find any statement on the subject, but it nearly all goes away to the weaving towns and to foreign countries. There are some 17,000 or 18,000 looms in the place and a few bleaching works, but these are a trifle compared with the production of yarn. With such an enormous activity the Oldham mills are, of course, very largely dependent on foreign markets. They have for many years been feeding the growing cotton-weaving industries of other countries with material, just as the Oldham machinery works have fed them with plant; and their "cops" went everywhere. Germany and France were among their best customers, but these markets have fallen off. All the indications point to increasingly severe competition, from which Oldham has more to fear than Bolton, and since the bulk of the cotton used comes from America, to the menace of competition is added that of short supply, not merely through gambling operations but by the growing ability of the American mills to consume their own crop. The Oldham manufacturers have good reason to watch with concern the rapid multiplication of mills in the Southern States and to promote the movement for an alternative British supply.

The remarks already made about the Lancashire cotton mills and their appointments apply to Oldham not less than to Bolton. The same vigour and energy are visible in the erection of new mills and in their equipment with the most recent machinery. The workpeople are organised in a similar manner and on the whole the unions maintain good relations with the manufacturers, though I did not

find quite the same cordial acknowledgment as in Bolton. The machinery for settling disputes between labour and capital in these towns is the most complete and satisfactory that exists in any large industry in any country. An account of it is given in the chapter on trade unions on pp. 533-568 The wages of cotton spinners are regulated, as at Bolton, by a price-list agreed to by employers and operatives. Adopted in 1876 it forms the standard for the district. From 1876, when the list was adopted, down to 1900 wages ranged from 5 to 20 per cent. below the list, but in 1900 the standard was regained. This, I believe, is due to the energy and enterprise put into the business. The other great industry of the town—the manufacture of textile machinery—is conducted with at least equal vigour and is even more flourishing, though it has felt the stress of foreign competition and the recent depression of trade. Oldham boasts two large concerns of the highest reputation—Platt Brothers & Co., Limited, and Asa Lees & Co., Limited. I have found their machines at work in every cotton country. The works of the former are the largest of their kind in the world and rival the most famous establishments in any country. Here are 12,000 men employed in the manufacture of spinning and weaving machinery. The works cover sixty acres and are extraordinarily complete. They include saw mills, brass and iron foundries, an underground electric railway and other appointments of the most modern kind. The timber department, in which the packing-cases are made, is in itself as large as a first-class Canadian lumber mill. The foundries alone employ 600 men and possess the singular feature of being built in three stories. The workshops are very fine, all the machinery used in them is English, being made at Oldham, Bolton, Manchester and Rochdale. The management is fully alive to the necessity of keeping abreast of the times in the adoption of improvements, but does not believe in "scrapping" machinery which does its work well, merely because it is old. That is sound sense. There is undoubtedly a *via media* in this matter, and the restless pursuit of novelty for its own sake may be carried too far. Platt's machinery goes all over the world, to America, China, India, Japan and the continent of

Europe; but competition by Germany and Belgium is felt, though not as yet severely. These works can turn out regularly 30,000 mule spindles a week, 12,000 ring spindles, 250 looms and the other machinery to match. And it is all of the best, as those who use it acknowledge with one consent. Some writers are in the habit of deploring the export trade of textile machinery from England, which provides other countries with the means of competing with home manufactures, but that is a narrow and antiquated view of international industry. Any restriction of export is unthinkable. Those who suggest or hint at such a step can have no conception of the extent to which our manufacturing population is dependent on this great trade. I recommend them to go and see Platt's 12,000 men stream out of the works at closing time. Moreover the only effect of restriction would be to stimulate the manufacture of machinery in other countries, which are already coming up fast.

There are no fancy appointments at Platt's, but the factory conditions are good and the comfort of the men sufficiently considered. A dining-room which will accommodate one thousand is provided for those who cannot go home to meals, and the wage system is satisfactory to both sides. It is chiefly piece-work with a minimum weekly basis and a bonus, according to the output. Engineers consider that they have done badly if they do not make 12s. above the weekly standard of 38s.

Probably enough has been said to show how the people of Oldham earn their living and what sort of a living it is. I am inclined to think that the general standard of comfort is even higher here than at Bolton, or possibly it may only seem so through the greater contrast afforded by the more homely exterior of the place. Beneath that dull and drab surface one finds an extraordinarily high general level of comfort prevailing, and a great enjoyment of life. One piece of evidence is striking. There are in Oldham three theatres and two music halls. This purely industrial town with a population of about 140,000 supports more places of amusement, in spite of its proximity to Manchester, than Brighton and Hove with a larger population consisting chiefly of middle-class residents and visitors of

means. All our manufacturing towns are well provided with theatres, but Oldham has the largest supply in proportion to population of any that I have seen. I recommend the student of industrial life to add the theatre and the music hall to the football field and the market as fields of observation. He will see the working classes gathered night after night, men, women, girls and boys—particularly boys; not in rags and misery, but well-clothed, well-fed, hearty and full of life. In London and other mixed towns it is impossible to say who the theatre-goers are or where they come from, but in these manufacturing towns there is no doubt about it. They are the hands out of the mill and the workshop. Another piece of evidence bearing on the standard of living in Oldham is the institution of the "wakes' week". Wakes are the local fairs or feasts which take place on some day in July, August or September. The work-people take a week at the end of August and go to the sea-side. The mills are closed on the last Saturday in August and are not re-opened until the following Monday week. This is settled by mutual arrangement between the employers' and operatives' associations, and is embodied in the official wages list. The money for the holiday is usually saved by weekly deposits into a fund throughout the year. This custom is peculiar to Oldham, where the people are said to be less thrifty than in other places and to prefer spending their savings on a good holiday once a year to keeping them for other purposes. It is said that in 1903 the sum drawn out for the wakes' week was £180,000, in spite of depressed trade and short time. I am told, however, that the custom is not so generally observed as it used to be, and that a more frugal spirit is gaining ground. Whether this is an advantage or not may be a matter of opinion; unless the money devoted to the holiday is saved by skimping the necessaries of life, of which there is no sign whatever, it is difficult to see how it could be better expended.

I have mentioned the extreme plainness of the town. It is epitomised in the town-hall, surely the most modest edifice of the kind to be found anywhere. Many a little country town with one-tenth of the population has a more pretentious civic headquarters. The railway station is more

than modest; it is wretched. No place of so much importance is entered by such a depressing portal. But in the vigour and efficiency of corporate life Oldham is in no respect behind its neighbours. It has excellent technical schools; a good public library, art gallery and museum, with a branch library and reading-room and eight other stations for the issue of books; a Lyceum, which comprises another library with news-rooms and is a handsome building; five sets of public baths; electric trams and electric light; a general hospital, fever and small-pox hospitals; and there are seventy clubs in the town. Elementary education was shared in nearly equal proportions between Board and Voluntary Schools according to the last report I could obtain (1900). The total accommodation was then 28,052 places, thus distributed: Board schools, 14,155; Church of England, 7,273; Roman Catholic, 2,426; Wesleyan, 2,986; "British," 1,212. The places of worship numbered seventy-nine, of which twenty-five belonged to the Established Church. I mention these details to show that there is nothing benighted or heathenish about this curious town with its unusual contempt for show. Nor are the more elegant amenities of modern life altogether lacking. One morning in the month of December I was going there by train from Manchester, and a woman got into the compartment carrying several large boxes of cut flowers. She set to work to re-arrange them with a professional hand, and I asked her where they came from and were going to. She was taking them to Oldham to sell and said that they came from the south of France through the market at Manchester. Cut flowers from the south of France to the town of spindles, wooden clogs and shawl-hooded factory girls! Clogs, by-the-by, are still much worn, but chiefly by children and as part of the workaday dress. So, too, with shawls in lieu of hats or bonnets. We are accustomed to associate this style of dress with the lowest and most poverty-stricken class of women; but that connection does not hold good in Lancashire. There it has no such significance, but is merely a local costume which may go with the most comfortable and respectable circumstances. I have repeatedly seen groups of women bare-headed and shawled but wearing excellent clothes,

exquisitely clean and models of neatness. On Sunday they assume a more fashionable appearance and can hold their own in the matter of dress with the work-people of any district or country.

The situation of Oldham is very similar to that of Bolton. It lies on hilly ground on the bank of a small river, but the surroundings are less attractive. The housing is of the same character and for the most part good. The average number of persons to a house is 4·58 (1901). The density of population is twenty-nine persons to the acre for the whole borough and ninety-four in the most populous district. I could find even less visible evidence of squalid poverty in Oldham than in Bolton; one traverses street after street of tidy, well-kept cottages. They are monotonous but comfortable. And here, too, many workmen are the owners of their houses. Of course in a town of this size there is some insanitary property. In the health report for 1901 I find it stated that forty houses were visited by the Committee as reported unfit for habitation. "Eight of these houses were ordered to be closed as unfit for habitation. Eight back-to-back houses were to be closed unless converted into through houses. Twelve houses were considered unsatisfactory, but the question of closing them was adjourned for a period of six months in order to give the owner, into whose possession they had recently come, and who had spent a considerable sum in repairs, time to suggest a scheme for their re-construction. The remaining houses were left over for future consideration. In addition to these houses fifty-two have been voluntarily closed by the owners during the year—some on account of their insanitary or dilapidated condition being brought to the notice of the owners by the Health Authority, and others to increase or improve the accommodation of adjoining buildings." I give this extract because I think it fairly shows the proportion of insanitary housing and the activity of the local authority in mitigating it. The town is sewered and drained; it has no middens or cesspools, and the water carriage system is steadily extended year by year. The sewage is treated on modern principles by sedimentation and bacterial filter beds.

Vital Statistics of Oldham, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births over Deaths.	Deaths under one year per 1,000 Births.
137,413	24·6	19·6	5·0	173

Miscellaneous Statistics.

Liquor Licences.	Proceedings for Drunkenness.		
501	828		
Churches (Established).	Theatres.	Newspapers.	Public Libraries.
25	5	4	2

Blackburn.

Blackburn completes the trio of great cotton manufacturing towns; Bolton is the chief centre for fine spinning, Oldham for coarse spinning and Blackburn for weaving. It has only a comparative trifle of $1\frac{1}{3}$ million spindles, but nearly 80,000 looms (Worrall's *Directory*). Consequently the Associations of Cotton Cloth Manufacturers and of Weaving Operatives have their headquarters here. The Manufacturers' Association represents some 300,000 looms, which is about one-half of the total number in Lancashire. It has local branches at Preston, Accrington, Bury, Rochdale, Bolton, and other towns. The Operative Weavers' Association counts about 90,000 members, of whom 19,000 belong to Blackburn. Three-fifths of them are women. I do not know why the weaving industry has developed here more than in any other town, for Blackburn was later in adopting the power-loom than some of its neighbours, but it is an ancient seat of textile manufactures with a history very similar to those already recounted. The Parish Church dates from 598, and before that the Romans had a settlement here, as in so many ancient seats of industry. The connection occurs so often that, as I have suggested before, it is probably more than accidental. The Flemish weavers brought the use of cotton yarn in the seventeenth century, and "Blackburn checks," woven of a linen warp and cotton weft, dyed in the thread, became famous. These were superseded by "Blackburn greys," which remained the staple trade until the era of machinery and cotton. Its advent was nowhere more strenuously

opposed. Hargreaves belonged to this neighbourhood, and his fellow workmen did him the honour to break into his house and smash his machine. The opposition to spinning machinery had been so violent that when the power-loom came the manufacturers were afraid to introduce it, as they were at Bolton, until it had been well established elsewhere. After that Blackburn developed rapidly like the others.

In its natural features and immediate surroundings this town is the most attractive of the three. It is situated on the banks of two small streams, the Blackwater and the Darwen. The lie of the ground is hilly and diversified; there is some picturesqueness in the centre of the town, in the grouping of buildings and the irregular streets; and a large park, left in the natural state, is a feature of exceptional charm. The outskirts are also brightened by a residential fringe of superior houses with good gardens. Being at a greater distance from Manchester than Oldham and Bolton, Blackburn is less dependent on that centre, but is rather a centre itself for a number of smaller towns and villages around it. It has a more residential character and provides more accommodation for visitors. At the same time signs of poverty are more common and slummy dwellings more numerous, although the density of population for the whole borough is very low, and the number of persons per house is only 4·6, which is just about the same as in Bolton and Oldham. In 1901, sixty-one houses were "closed as unfit for habitation," forty-seven were "ordered to be altered or closed," sixty-four cases of "dilapidated premises" were scheduled, and fifteen houses were demolished. These figures bear out the results of observation. Although the expenditure on actual pauperism is as low in Blackburn (1s. 11d. per head in 1902) as in the neighbouring towns, the general standard of comfort is not so high. Weaving is a less remunerative occupation than spinning, and it is subject to greater pressure from foreign competition. Since 1878 wages have remained from 7½ to 15 per cent. below the standard list, and the comparative lack of prosperity is reflected in the movement of the population. In the decade 1891-1901 emigration exceeded immigration, and the rate of increase, which had been 20·4 per cent. in 1871-

81 and 15·4 per cent. in 1881-91, fell to 6·3 per cent., so that the population of the borough was found at the last census to have been largely overestimated.

The trade-union representatives of the operatives do not allow any serious weight to foreign competition as a factor in the comparative stagnation of the local industry, but they accuse the manufacturers of want of enterprise and of providing bad material. This complaint is persistently made, and in 1901 led to a strike. The union paid £2,000 to settle the action brought by the employers for picketing. The earnings of weavers, male and female, average 23s. a week. Some women earn more than men. With regard to the alleged lack of enterprise in the adoption of improvements on the part of employers, the trade union officials say that they are not so foolish as their forefathers in resisting novelties but rather welcome them. That does not agree with the information I have received in regard to their attitude towards the automatic loom; and whatever the views of the union may be, the rank and file of the work-people seem to be animated by much the same spirit as in the past, though it takes a less violent form. For instance, there was trouble not long ago on the introduction of the Barber knotter for knotting ends, and a strike occurred. The weaving trade is at present face to face with the problem of introducing a very important improvement in the shape of the automatic loom, which is gradually being perfected and is bound to come. Its adoption will not be an easy matter, and it remains to be seen how the weavers will take it. I am informed on the best possible authority that the trade union officials offer all the opposition they can and manufacturers are hesitating to make the experiment. Only one mill had been fitted with the automatic loom in 1904, but the future of a section of the weaving industry certainly depends on it. America has already taken a large part of the Shanghai trade from Lancashire and will not stop at that.

A point of great importance in industrial life, which I have not yet mentioned, comes into prominence at Blackburn. The infantile mortality is higher there than in any of the great towns with the sole exception of Preston, which is in the near neighbourhood and the seat of the same kinds

of industry. The mean infantile death-rate (deaths under one year to 1,000 births) of the twenty-eight large towns in the fourteen years 1888-1901 was 175; that of Blackburn was 203, and of Preston, 231. Nor is there any apparent tendency to diminution, but rather the contrary, although the birth-rate has fallen heavily, as the following table will show:—

Birth-rates and Infant Mortality at Blackburn.

Years.	Births per 1,000.	Deaths under one year per 1,000 born.
1883-86.	37·4.	166·2
1898-1901.	28·3.	202·7

This appears to me to indicate a very grave state of things and one which is not easily explained. To say merely that it is due to "the factory system" is no explanation at all, for that system was no less in operation in the earlier period than in the later. Nor can poverty be the cause, for the earlier period was one of greater depression and lower wages than the later. The standard of wages in each of the four years 1883-86 was 15, 10, 10 and 10 per cent. below the Blackburn list prices; in the four years, 1898-1901 it was only 10, 7½, 7½ and 7½ per cent. below.[1] A partial explanation is found in the weather, for the four later years had exceptionally hot summers, and the infant mortality always rises under that condition. Accordingly we find it higher for the whole country, the figures for the two periods being 152·2 and 160·7. But there is a vast difference between this increase and that noted for Blackburn—the difference between 5·5 per cent. and 22 per cent. There must be something very exceptional in the circumstances of this town. It is not general sanitation, which has improved, nor is it over-crowding, which has been lessened. In the decade 1891-1901 there was a decrease of overcrowding of 24·6 per cent. in one-roomed, 21·8 per cent. in two-roomed, and 6·0 per cent. in three-roomed tenements.[2] Another possible explanation is that

[1] *Board of Trade Blue-book on British and Foreign Trade and Industry*, 1903, p. 267.

[2] *Annual Report of Medical Officer of Health for Blackburn*, 1901, p. 8.

a larger proportion of women are now employed in the weaving sheds. There is certainly a connection between the factory employment of women and infant mortality, and it cannot be a mere coincidence that the latter should be higher in the two chief cotton weaving towns, Blackburn and Preston, than in the other large towns. The number of women employed in the textile industry at Blackburn is very large. Out of a total of 38,412 persons over ten years of age so employed at the time of the last census in 1901, 23,869, or more than three-fifths, were females, and of these, 8,368 were married women or widows. It is, of course, a commonplace that when girls go into the factory they do not learn domestic duties, and that mothers who go to work cannot attend to babies at home, but that has a general application. The question is whether the number is so much greater in Blackburn and Preston than in other textile towns as to account for the higher mortality, and whether the proportion has increased of late years. I find that as a matter of fact the number is much greater, as the following table shows :—

Town.	Women Employed in Textile Factories (1901).	Percentage of Population.	Infant Death-rate (Four Years).
Bradford . . .	32,696	11·7	169
Bolton . . .	17,849	10·6	172
Oldham . . .	17,099	12·4	179
Blackburn . . .	23,460	18·3	202
Preston . . .	16,263	14·3	233

From this it appears that there is a broad, though not an exact, correspondence between the proportion of women employed and the infantile death-rate ; and it is strengthened when the women are further classified into married and unmarried. The proportion of women classified in the census as "married or widowed" to the whole is, roughly : Bradford, one-fifth ; Bolton, one-eighth ; Oldham, between one-fourth and one-fifth ; Blackburn, more than one-third ; Preston, nearly one-third. Thus in the two towns conspicuous for excessive infant mortality not only is the proportion of women working in the factory much higher, but a much larger proportion of them are married. The connection is therefore clearly established.

But this does not account for the increase of infant

mortality noted above for Blackburn. On the employment hypothesis there should be a corresponding increase in the proportion of women employed, but that is not the case. On the contrary, there has been a diminution. The percentages shown by the three last censuses are: 1881, 19·4 per cent.; 1891, 19·5 per cent.; 1901, 18·3 per cent. In Preston also there has been a diminution, so that the employment hypothesis fails entirely on this point. Still less does it account for the higher mortality in Preston over that in Blackburn, for in the latter both the proportion of women employed and the proportion of married women to the whole number are higher than in Preston; yet in regard to infant mortality Preston is as much higher than Blackburn as Blackburn is higher than the other towns. Obviously there are other factors at work. The whole question demands a much more searching investigation than I am able to give to it here. As one of the most important conditions of industrial life I could not pass it over in connection with Blackburn, where it arrests attention in such a striking fashion, but I have only been able to touch on certain points. Some further observations will be found in the next chapter in connection with Saxony, where the infantile mortality is very much higher than in any of the English towns. (See also the figures for the American textile towns, which are equally high, in Chapter IV.)

"Factory" in Blackburn means for the most part weaving shed. This is a workshop to which a great deal of attention has been devoted, and it has an Act of Parliament all to itself. This Act is discussed in the chapter on Factory Laws. There is a good deal to be said about it from different points of view. It was chiefly intended to improve the air in cotton weaving sheds, where the use of artificial moisture tends to enhance the fouling of the atmosphere. There is no evidence that the occupation is specially injurious to health, but it is satisfactory to note that a great improvement in the atmospheric and other conditions has been effected in recent years. On that head the district factory inspector and the medical officer for Blackburn are agreed. The latter says: "The health conditions of the cotton factories, but more particularly of

weaving sheds, is undoubtedly rapidly improving".[1] I have mentioned above the complaint of the trade unions that the Blackburn employers lack enterprise. I do not know whether that charge is justified or not, but I certainly could not take a German or American manufacturer into a Blackburn shed with as much confidence as I could into a Bolton spinning mill. Backwardness, however, seems to be due more to the trade than to the place, for I have been over a spinning mill in Blackburn (the Imperial) which cannot be surpassed for equipment anywhere. The weaving trade has been depressed, and, in addition, the extremely drastic provisions of the Cotton Cloth Factory Act have not tended to encourage the investment of money in the business. The number of persons employed in the manufacture of cotton at Blackburn diminished from 39,220 in 1891, to 37,431 in 1901; and in Preston from 28,383 to 23,951. More recently signs of reviving enterprise have appeared and new mills are being built.

There is, however, one industrial matter in which Blackburn cannot be charged with any lack of enterprise. I refer to its admirably appointed technical school, of which full advantage is taken by throngs of lads out of the mills. The school is housed in a handsome building standing in its own grounds and is as complete as it is well-attended. Special attention is, of course, paid to the local industry and the courses of instruction in designing, weaving and dyeing are most thorough.

In municipal activity Blackburn is in no wise behind its neighbours, and in one respect it has taken, perhaps, exceptionally vigorous and successful action in a campaign against betting. Bye-laws for dealing with street and public-house betting were adopted in 1898, and the chief constable informed me at the end of 1902 that it had been practically stamped out: they had not had a case for eighteen months. This very important subject is discussed in the chapter on Social Conditions.

I have already mentioned the large proportion of denominational elementary schools in Lancashire. The case of Blackburn is still more striking than those of Bolton and

[1] *Annual Report for 1900*, p. 97.

Oldham. The accommodation provided in 1900 was as follows :—

Board Schools	1,578
Church of England Schools	16,106
British and Nonconformist Schools	7,346
Roman Catholic Schools	4,763
Total	29,793

The number of places of worship is eighty-six, of which thirty-three are Church of England, ten Roman Catholic, thirty-seven Nonconformist, and the rest miscellaneous.

Vital Statistics of Blackburn, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births over Deaths.	Deaths under one year per 1,000 born.
127,719	26·5	19·5	7·0	193

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Proceedings for Drunkenness.
145	468	684

Churches (Established).	Theatres.	Newspapers.	Public Libraries.
33	3	3	3

Of the other large Lancashire towns, Preston, Burnley, Bury and Rochdale are all engaged chiefly in the manufacture of cotton, but paper is also a leading industry at Bury. With the exception of Preston, which is the most pleasing of all our manufacturing towns, they are inferior to those described. Rochdale is the original home of the co-operative movement. Warrington stands apart; it is an iron and steel town and noted for the manufacture of wire.

The Yorkshire Towns.

The West Riding of Yorkshire bears a close resemblance to Lancashire in the nature of its industries, the character and customs of the people and the appearance of the towns not less than in its natural features. Yorkshire stands first of the counties in the production of iron and steel and in miscellaneous iron and steel trades, second in textiles

and in engineering and machinery. But there are differences. Coal, engineering and machinery are common to both; but in the textile manufactures cotton gives place to wool. Out of 209,000 persons employed in this branch, Yorkshire accounted for 181,000. Wool is no doubt the most ancient of all the textile materials. The fibres have the property of felting, or adhering together, by reason of their serrated edges, and can therefore be formed into a kind of cloth by the simplest manipulation. They only require to be rubbed together by hand, and the more they are rubbed the closer they adhere. That, by the way, is the reason why wool fabrics shrink in washing; the manipulation causes the fibres to felt. This property must have been discovered and utilised by man in an early stage of development; and the sheep is a handy animal to keep in a grass country. The shepherd's is the oldest of trades next to the gardener's. And to my thinking wool is still the noblest and most interesting of all the materials. It has not the gloss of silk, the firm smoothness of linen, or the universal and multitudinous usability of cotton; nor can it compete with them in fineness of thread; but it has more character than any of them. It possesses more substance and durability, is more varied by nature and capable of more varied transformation by art; it serves more solid and serious purposes. And in sheer beauty it is very little behind silk. Dress fabrics are now produced from wool—in the general and non-technical sense of that word—of astonishing beauty, delicacy and variety. One might fill pages with descriptions of the things made from this invaluable material. And the West Riding of Yorkshire is the greatest seat of its manufacture. I do not mean to imply that Yorkshire has not serious rivals and even superiors in some respects; but if the whole art and craft of manipulating the raw fibre in all its varieties from sorting down to finishing be taken into account, then this corner of the world is just as pre-eminent both for what it has done and still does for the manufacture of wool as is Lancashire for that of cotton. It played the corresponding part in the mechanical revolution of a century ago, and it still produces the best machinery for many of the most important processes.

Bradford.

The headquarters of the industry is Bradford, which is the largest of all the purely textile towns. It owes this position chiefly to natural advantages which it possesses in the most bountiful measure. Beautifully situated on the green hills which rise to the south of the river Aire it must once have been a lovely spot. It stands on a rocky formation, which furnishes a cheap and abundant supply of the best building material. The town is solidly built of stone, handsome and durable, with only one defect; it readily absorbs carbon from the air, and as there is a good deal of carbon in the air Bradford buildings soon assume an excessively dingy aspect. The only consoling reflection is that they are not quite so black as those of Leeds. The ground furnishes an equally cheap and abundant supply of coal, lying near the surface and easily got. There are two beds, the upper at a mean depth of forty yards and the lower at eighty yards. And, to complete the tale, above the coal there is iron. The famous Low Moor iron—Low Moor is within the enlarged boundaries of the city, and Bowling ironworks are actually in the town—still holds its own with the best. Of course the Romans did not pass such a place over, and there is some reason for believing that they worked the iron stone. A beck runs through the town to join the river Aire, and on the banks the manufacture of clothing was carried on from a remote period. The Yorkshire dales hard by furnish the best of sheep grazing, and the famous Ripon fleece, which cannot be equalled for certain qualities, is the product of the neighbourhood.

To all these natural advantages must be added a native stock of remarkable vigour. The Yorkshire people are characterised by great independence, determination and shrewdness, and these qualities are associated in a peculiar degree with Bradford. The hero of most Yorkshire stories is supposed to be a "Bradford chap," rather than a native of York or Leeds or even Sheffield. This may be merely a conventional trick, but it is the fact that Leland, who described Bradford in the fifteenth century as a "praty quik market toune, which stondith much by clothing," observed that

Leeds, though equally large, was not so "quik"[1] as Bradford. The inhabitants have exhibited their quickness in various occasions and in divers ways. In the Parliamentary Wars they made great play on the revolutionary side and suffered heavily for the faith that was in them; but they stuck to their colours with undaunted resolution notwithstanding. Among other exploits they marched against Leeds which was in the hands of the Royalists and drove them out. Their military ardour was not less conspicuous in the Napoleonic Wars, when they helped to man the navy and raised a corps for home defence with enthusiasm. Again, in a very different sphere of action, Bradford's love of independence asserted itself in regard to Nonconformity, of which it became a stronghold. Similarly in the organised attack on the liquor traffic, Bradford took the lead in the first days of the "temperance movement" in England. In industrial matters the spirit of enterprise and the spirit of insubordination were both conspicuously displayed during the period of mechanical revolution, the one by the efforts to introduce machinery, the other by the determined opposition of the work people, which nowhere took a more violent form. In the evolution of textile machinery, its application to wool products and the utilisation of new materials Bradford has been a great pioneer.

All these factors have contributed to the industrial supremacy of this Yorkshire town in a branch of manufacture which is still very widely distributed and was once carried on with equal or greater success in many other parts of the kingdom (among them another Bradford in Wiltshire) and in many other countries. The northern town has won its position by degrees. It is an ancient place, mentioned in *Doomsday Book*. In 1256 it obtained a charter to hold a weekly market, and in an inquisition held in 1316 the existence of a fulling mill is mentioned. The town grew slowly in importance, but did not emerge into a position of marked industrial eminence until the steam and machinery era, when its coalfields gave it an advantage and proximity to Lancashire probably stimulated the invention

[1] Lively, vigorous—still used in that sense in Yorkshire, but more often in the form of "wick".

and adoption of mechanical appliances. I think it must be admitted that Lancashire and the cotton trade were the first in this field. The branch of the wool industry in which the Bradford district specialised was that known as "worsted". It is supposed to have taken its name from the village of Worstead in Norfolk, where the yarns were first made in England; but this derivation is of doubtful authenticity. The difference between worsted and woollen lies in the process of combing, by which the longer fibres of the wool are separated from the shorter. The former make worsted, for which the German term is "Kammgarn" or "comb-yarn". The traditional inventor and the patron saint of wool-combing was Bishop Blaize. It was a process laboriously carried on by hand long after spinning and weaving by machinery and steam-power were well established. Cartwright, indeed, invented a combing machine which was patented in 1789, and an improved one in the following year. This was almost a greater proof of genius than the power-loom, for he had no more practical knowledge of combing than of weaving; yet the principle of his second machine—the circular horizontal comb table—is identical with that of the most modern and efficient comber. Cartwright's machines were tried, but were not practically successful. Mr. Robert Ramsbotham was the first to introduce one into Bradford, and it did not answer. Nor was mechanical combing brought to a real success until half a century later, although many inventors tried their hands at it. The effective agent in perfecting the process was Mr. S. C. Lister, now Lord Masham, and Bradford was the scene of the achievement. Mr. Lister was the pioneer not so much of invention as of actual industrial application. In 1842 he took up a machine brought out by Donisthorpe of Leeds, and the two together turned it into such a practical success that wool was combed by it at Manningham in 1843, and they had orders for fifty of the machines from two other manufacturers. Priority was, however, subsequently claimed by the Alsatian inventor, Heilmann, who patented a machine in 1846. Bradford was full of enterprise in those days; and other manufacturers, one of whom was Sir Titus Salt, bought up Heilmann's rights and in 1852 challenged the Lister-Donisthorpe combination in the

courts. The decision was that each had infringed the other's patents. Eventually Mr. Lister bought the Heilmann patents for £30,000, but instead of using them he continued to improve his own machines. So valuable were they considered that, though the selling price of a machine was only £150, manufacturers were willing to pay a royalty of £1,000 on each—said to be the highest patent royalty on record. Some share of the credit was also due to Mr. Isaac Holden, with whom Mr. Lister was working on the problem at this time.[1] The Lister comber, as it is called (whatever the share of Donisthorpe, Heilmann or Holden in its evolution) is certainly a most fascinating piece of mechanism. It has the "square motion" action, which probably resembles the movement of the human arm and hand more nearly than any other machine yet invented. The arm bends down, seizes a handful of wool fibres, turns back on its elbow and hands them on. But it is not the comber now most in vogue. That is the "Noble," which is also a very beautiful machine, but on a totally different principle. It consists of concentric rings of pins or teeth revolving slowly in a large horizontal circle about 4 feet in diameter, and drawing the longer fibres out with a quick beating action. Wherever wool is combed you will see these machines, made in Yorkshire, with even more certainty than you will see Lancashire mules, wherever fine cotton is spun.

The story of wool-combing has led me out of the chronological order. The introduction of steam-power and machinery for other processes came long before the Lister period. About 1790 a manufacturer of the name of Buckley attempted to introduce steam-power into a worsted mill, but being strongly opposed he gave way. In 1794 two spinning machines were installed by a Mr. Garnett, and others by the Mr. Ramsbotham who tried Cartwright's comber. In 1800 the first steam mill was erected with an engine of fifteen horse power. In 1820 there were twenty with an aggregate of 538 horse power, and they continued to increase rapidly. But this change was not accomplished

[1] For the foregoing facts about the invention of the wool-combing machine I am indebted to a pamphlet prepared for the Bradford Cartwright Exhibition in 1904.

without a severe and sanguinary struggle, which amounted to a state of civil war. It is thus described :—

"In 1812 a spirit of insubordination was diffused through the wide and densely populated district of which Bradford is the centre, in consequence of the introduction of certain kinds of machinery. The lawless system under which the insurgents acted was called *Luddism*, and an imaginary personage styled 'General' *alias* 'Ned Ludd,' was their reputed commander. To effect the destruction of machinery and to attack the buildings in which it was contained fire-arms became necessary; hence bands of men, confederated for the purpose and bound by illegal oaths, were found prowling about the disturbed districts by night, rousing the inhabitants from their beds and demanding the arms provided for the defence of their dwellings."[1]

Eventually the hands of authority were strengthened by a special Act making the administration of these oaths a capital offence. Sixty-six persons were apprehended and seventeen executed. This put an end to Luddism, but they were ever a stubborn or—to use the more expressive colloquial word—a *stunt* folk in Yorkshire, and they had by no means done with their resistance to machinery. The particular objects of the Luddite hostility were the machines for dressing cloth; the turn of the weavers and the power-loom was to come. In 1822 one was secretly built by Mr. Warbrick, but the weavers got wind of it, surrounded the mill and threatened to break in and destroy the obnoxious thing. So it was taken down and carried away, but the mob attacked and smashed it on the road. Nor did they cease their opposition for several years. In 1825 a trade union was formed and a strike, which lasted twenty-two weeks, occurred. There were at that time over 20,000 weavers in the district, and they earned from 10s. to 12s. a week. The employers were, however, equally stunt, and in 1826 matters came to a crisis. In one factory a riot occurred, in the course of which two men were killed. This sobered the rest and from that time the march of machinery went forward more smoothly. In 1834 the Jacquard loom was introduced and the screw gill applied to worsted spinning.

[1] See Baines's *History and Directory of Yorkshire*.

About this time Bradford enterprise was displayed in another direction by the introduction of new materials in the shape of alpaca and mohair which have ever since been a conspicuous and special feature of the local industry. The alpaca is a sheep-like animal with a fleece remarkable for length, softness and brightness; its native home is Peru. The credit of successfully utilising it for manufacture on a commercial scale belongs entirely to Sir Titus Salt, who displayed extraordinary sagacity, perseverance and ingenuity in detecting the quality of the fibre and turning it to account. The story of the young wool-stapler who became one of the greatest of manufacturers and the creator of the first model factory village is one of the romances of industry. Mohair is the fleece of the Angora goat, known and valued as a textile material in the East from the remotest antiquity. Its qualities are length of staple, softness, brilliance and capacity for taking the dye. It has almost the lustre of silk. The supply used to come entirely from Asia Minor, but of late years the goat has been bred at the Cape, which now exports nearly twice as much as Turkey. The Turkish mohair is liable to contain the spores of anthrax, and particularly that which comes from the Van district. Great care is taken to prevent infection, but cases still occasionally occur. Its use is therefore not without drawback, but it has greatly contributed to the development of the Bradford trade. The dress material commonly called alpaca by ladies is chiefly made of mohair.

Probably enough has now been said to show how much the evolution of this great industrial district owes to native energy, as well as to natural advantages. But two other points deserve to be mentioned. One is the creation of the silk waste industry by Mr. Lister, who embarked on this enterprise after the successful achievement of mechanical wool-combing already related, and carried it through with the same ingenuity, resource and resolution. At present the great mills at Manningham are entirely devoted to the manufacture of silks, plushes and velvets by Mr. Lister's processes. But this is an individual case. The other point is the dyeing trade. Formerly Bradford cloths were chiefly dyed at Leeds, but the local industry has now been de-

veloped on a large scale, and the Bradford Dyers' Association is an important body. Nearly 5,000 persons are employed in bleaching and dyeing. Exclusive of these the number employed in the wool and worsted trade is 46,401 (1901). They are thus distributed: Wool-sorting, 1,747; combing, 5,375; spinning, 14,683; weaving, 16,086; other processes, 8,530. Of those employed in weaving nearly 13,000, or considerably more than three-fourths, are females. The total number employed in the various branches of the textile industry in Bradford is 58,791, of whom 32,696 are females. But even these figures give no idea of the manufacturing activity of the district. The town of Bradford is merely the centre. It is encircled by a dense ring of small towns and villages, in many parts practically continuous, and behind these a further ring of larger towns—Halifax, Huddersfield, Dewsbury, Wakefield, Keighley—all given up to the same or closely allied branches of manufacture, not to mention Leeds, which is the commercial capital of the whole, and holds a position in the West Riding somewhat analogous to that of Manchester in Lancashire. These towns specialise more or less after the manner of the cotton towns previously described. Thus Halifax is famous for carpets, having the great Crossley Mills, where all the finer kinds of English carpet are made, in the heart of the town. Huddersfield and Dewsbury are the chief centres of the woollen as distinguished from the worsted industry; here the shorter fibres or "noils," separated in combing, are worked into blankets, shoddy and other cheap clothing materials. This trade has recently provided a good instance of the value of ingenuity and the influence of fashion. Some one invented a material called "zhibeline," having a very loose texture and a hairy surface, made from woollen yarn. It was particularly suited for children's and women's jackets and became very popular. The usually despised "noils" were forthwith in great demand and the woollen trade enjoyed a substantial lift. Keighley is especially distinguished for the manufacture of textile machinery. There the famous establishments of Prince Smith and Hattersley are situated; their machines go all over the world and have a reputation second to none.

A detailed account of these towns would occupy more

space than I can afford; it must suffice to take Bradford to represent the group.

As a town it presents some differences from those in Lancashire. I have already mentioned that it is built of stone instead of brick. This gives it a very handsome appearance where the buildings are clean or new, but when smoked-begrimed the stone assumes a gloomy and forbidding aspect. On the whole it is less cheerful than brick. For this and for other reasons the place is less homely I have called Leeds the commercial capital of the district, but it does not absorb the business element to anything like the same extent as Manchester. Bradford does its own business in a great measure and consequently contains a large number of big buildings—warehouses, offices, hotels—such as are not to be found at all in Bolton or Oldham. The centre of the town is made up of them, with shops to correspond; and indeed it presents a more important appearance than Leeds or Sheffield, though the latter are so much larger. The town hall, built in 1813, at a cost of £170,000, is well placed and an imposing object. The ground is very hilly and the irregularity of the central streets, which run in all directions, attests the antiquity of the place. The outskirts of the town have now extended in all directions and have become continuous with surrounding villages, once separate, such as Bierly, Thornton, Shipley, Saltaire; and some of the villages have themselves grown into towns. Numerous houses of a superior kind with gardens indicate the presence of a large class of well-to-do residents. And along with the signs of wealth are, as usual, to be found evidences of poverty. If Bradford surpasses the Lancashire towns (Manchester and Liverpool excluded) in the size of its buildings, the importance of its streets and the whole impression of wealth and power, it certainly falls short of them in the general standard of living maintained by the mass of the people. There is more squalor and more bad housing. Bradford contains a considerable area of slums. I am informed that they are inhabited chiefly by Irish of a low class employed in the mills on low wages. That may be, but the standing conditions are distinctly bad. There is a large amount of insanitary property and much overcrowding.

According to a special report made by the medical officer in 1896, out of the fifteen wards into which the borough is divided, nine contained over sixty per cent. of back-to-back houses, and the remaining six contained from forty to sixty per cent. There were 619 houses back-to-back in continuous rows with a population of 2,728, and 1,928 houses back-to-back in blocks of four with a population of 9,116. Some of this property was built so late as 1892. A further report in 1898 gave details of a particular insanitary area consisting of 284 houses. The density of population was 301 persons to the acre, and the death-rate in the three years, 1895-97, ranged from 45·6 to 41·2 per 1,000. The sanitary condition of many of the houses was extremely defective. Considerable improvements have been effected since, but the census of 1901 showed that of the total population occupying houses of less than five rooms—namely, 205,231 persons—19·9 per cent. were living in a state of overcrowding (more than two persons to a room). The one-roomed tenements numbered 1,511, in which 3,288 persons were living and 54·3 per cent. of them in a state of overcrowding. Further, the medical officer's annual report for 1901 states that there were 531 cellar dwellings in the town, of which 136 did not comply with the regulations of the Public Health Act of 1875. Observation corroborates the unfavourable impression suggested by these facts. In examining the town I discovered the insanitary area referred to before I had heard of its existence, and was much struck by its bad condition in many respects, though I believe it has been improved since the date of the reports quoted.

Nevertheless it would be a mistake to conclude that Bradford is a dreadful place. Much of the housing is good, and in some of the outlying mill districts it is excellent. The density of population for the whole borough is only twenty-one persons to the acre, the number of persons to a house is only 4·3, the death rate is below the mean of the large towns and the infantile death rate no higher. Some facts about the latter have already been given in connection with Blackburn. I will only add one other suggestive point here. The infant mortality in the Yorkshire textile towns is considerably less than in the Lancashire ones.

That is not due to superior prosperity or mode of living or character of the people ; nor is the relative proportion of women employed in factories more than a minor cause. The most important cause is simply that the birth rate is lower in the Yorkshire towns. The Lancashire people are less thrifty and prudent, and they have not carried the artificial avoidance of motherhood so far. Instead they let more children die. This feature of industrial life is exemplified in a still more striking degree in Saxony, where the arts of prevention are not practised at all.

Among the buildings which command attention in and about Bradford are the great mills, where its work is carried on. They are worth some notice, for they have no equals elsewhere. I fancy Saltaire must have given the lead in building premises of this character, for the old mills in the district are no better than those anywhere else. It was in 1851 that Sir Titus Salt was driven by his increasing business to look afield for new premises, and he went down to the river Aire, where there was plenty of room. There he built his mills and his model village for the workpeople, which he called, neatly enough, Saltaire. It is no longer a village, but part of the town of Shipley, which again is practically, though not administratively, part of Bradford. Unless I am mistaken this venture set a style in factory building, though possibly one of the other great firms was first in the field. At any rate there is nothing anywhere else like these stately structures, solidly built of freestone, with gateway and approaches fit for a nobleman's mansion, roadways and yards beautifully kept, and a general air of dignity that reminds one rather of Windsor Castle than of a place of business. In addition to Saltaire I would mention Manningham (Lister's), Black Dike at Queensbury (John Foster & Son), Priestley's and Holden's, both in Bradford, and, perhaps most striking of all, the Greenholme Mills (W. Fison & Co.) at Burley-in-Wharfedale. The last is some little distance away, but it is in the Bradford district and the Bradford style. Surely no factory ever stood amid such charming surroundings or had so engaging an air. It stands in a veritable park on the banks of the beautiful and romantic Wharfe. The view from the wool-sorting room is like looking out of a window at Arundel.

Manningham is the largest of these great establishments. It employs over 4,000 hands, Saltaire and Priestley's are not far behind with 3,500; at Black Dike there are 2,600. A notable feature in connection with them is the housing provided for the work-people hard by. This is done on the largest scale at Saltaire, where some 900 houses have been built. They are excellent stone cottages and in great demand. The rents run from 3s. to 5s. a week according to size. I took particulars of some of them from the inmates, and found the scale as follows: Four-roomed houses, 3s. 9d.; five-roomed, 4s. 3d.; six-roomed, 5s.; that is to say, from 10d. to 11d. a room. At Black Dike Messrs. Foster have built 300 houses of the same character and equally moderate rental; and at Burley Messrs. Fison have about 100. Rent is much higher in the town of Bradford, running up to 6s. 6d. for average four-roomed houses and to 8s. for new ones. Besides houses there are at all these places various other provisions for the benefit of the work-people—schools and "institutes," with libraries, reading-rooms, lecture-rooms, recreation-rooms, baths, and so forth. At Saltaire there are in addition a hospital and almhouses with an endowment of £30,000 for the aged poor, a church and Sunday schools and a charming park.

With regard to the industries the Lister mills at Manningham are a thing apart, being devoted to silk. Cotton and hemp are also manufactured on a small scale and there are some machinery works. But worsted and wool are the staple, and the trade is divided into many branches. There are not only the successive processes to which the material is subjected, but there are also different classes of material. Hence a great deal of specialisation. Some mills do nothing but comb, others nothing but spin, and they may even confine themselves to a single quality of yarn. Then there are the further processes of weaving, bleaching, dyeing and printing. Some of the great mills combine them all. They carry out every process from wool sorting to the finished goods, which include a great variety of dress materials both for men and women. But, as with the cotton trade, foreign competition and protective tariffs have fallen most heavily on the export business in finished goods. They find it easier to weave and dye than to comb and spin in other

countries; and the development of those branches under the fostering influence of high duties has diminished the demand for cloth and increased that for yarn from England. Bradford therefore depends more and more on combing and spinning, and that tendency seems likely to continue. Not that the export of cloth has ceased. The superior quality —for Bradford justly prides itself on sending out the very best—still breaks a way through tariff walls to some extent; and new markets have been found. By the exercise of energy they may be retained and extended. But the commercial success of Bradford depends mainly on worsted yarn to-day. In this product other countries cannot yet effectually compete, partly from lack of skill, partly from inferiority of material, and partly from climatic disadvantages. The last is very important. We have no more valuable industrial asset than our climate. I have mentioned its influence on the cotton trade; in worsted it is even more marked. The fibres of wool are very susceptible to electricity developed by friction, and in hot climates combing cannot be successfully carried on for this reason. Instead of lying smooth and straight and ready for spinning as they should, they go "wild" and stand out in different directions. The difficulty has not been overcome by any device and the advantage remains with the more temperate climate. A preliminary process requiring much skill and experience is wool-sorting. Not only do fleeces differ widely but each fleece contains several qualities or grades of wool corresponding to the parts of the body. These are separated and divided into classes, which again may be blended for different purposes. Wool-sorters earn from 35s. to 55s. a week. In recent years a good many have gone from the Bradford district to the United States. The earnings of weavers are based on a price list agreed to between the Chamber of Commerce and the Trades Council, in consequence, I am told, of a statement made by Mr. Drew, secretary of the Trades Council, to the Royal Commission on Labour, that the average weekly earnings of weavers did not amount to more than 9s. for the whole year. Weavers, it must be remembered, are chiefly women and girls. Their earnings now run from 16s. to 25s. for a week of fifty-five hours. In some mills male weavers earn as

much as 37s. a week. In the spinning room girls are chiefly employed and earn about 11s. a week; their work is very light. Children enter the mills at about 9s. a week. In the dyeing and finishing branch of the wool and worsted industry wages are based on an agreement entered into by the Bradford Dyers' Association for the employers, and by the Amalgamated Society of Dyers with some other trade unions for the employed. From the printed list supplied me I gather that the minimum rate for men employed in skilled work runs from 22s. to 25s., and for boys from 10s. upwards for a week of fifty-four hours. Very few women are employed. Consequently the dyers are better organised than other branches, which employ more women. The wool trade is certainly much less strongly organised as a whole than the cotton trade, and I think this is partly due to the character of the people. They are more individually independent and take less readily to combination of all kinds than the natives of Lancashire. The owners of several mills have told me that they never hear anything of the trade unions and have no trouble at all with their hands.

Bradford has an excellent Technical College, which is beginning to have a marked influence upon the local industries. I say beginning, because manufacturers do not yet avail themselves of the expert knowledge which the technical courses impart to anything like the extent that they might, but they are more and more coming to recognise the value and, indeed, the necessity of employing it. The College already does very good work, and will do better when it is more completely organised. The total number of students in 1902 was 1,136, of whom 188 attended the textile, 158 the dyeing, and 567 the engineering classes. The last include some handicrafts. The College is housed in a three-storied building which cost, with equipment, about £40,000, and in addition branch classes are held in the elementary schools. The weaving installation is particularly complete and well organised; and there is a good textile museum. But, as usual, the attempt is made to teach too many things, and the accommodation is already outgrown. If the present building were devoted to the purposes of a textile school alone, with departments for preparatory processes, weaving, dyeing, finishing and

machinery, all thoroughly organised, it would be second to none.

Other features of the town are a Conditioning House for testing wool, yarn, cloth, oils and other materials; an Art Gallery and Museum, a Cartwright Memorial Hall, both the gift of Lord Masham, seven public parks, a Mechanics' Institute, built at a cost of £32,000, several public baths, and a public library with thirteen branches. With regard to elementary education, the denominational schools do not take nearly so large a share as in the Lancashire towns. In 1900 there were 119 Board Schools with accommodation for 39,754 children, and an average attendance of 27,035, and seventy-five denominational schools with accommodation for 23,337, and an average attendance of 12,586. Of the denominational schools, fifty-six belonged to the Church of England, seventeen were Roman Catholic and two Nonconformist. The number of places of worship is 220, of which forty-five belong to the Church of England. Bradford is the centre of an extensive system of railways and electric tramways, and it is also connected with Leeds and other towns by canal.

A notable feature of the Yorkshire towns, of which I have taken Bradford as a type, is the great love of music inherent in the people. They have innumerable choral and instrumental societies, and their choral singing enjoys a European reputation. Every eminent foreign musician who has conducted the large Yorkshire choirs or heard them sing has accorded them unqualified praise. Their singing is distinguished by the strong ringing tone of the voices, the excellent intonation maintained even in the most trying works, a high degree of intelligence and extraordinary vigour and enthusiasm. The choirs of Leeds and Sheffield are the most famous, probably because they are the largest, but those of other towns are not a whit inferior in capacity. I have heard Mendelssohn's "St. Paul" given in Bradford in a style entirely beyond criticism. The soloists were the best of the day (the best English, that is), but the chorus "sang them off the platform" in every point of singing—voice, style and intelligence. These societies consist largely of mill and factory hands, and they are to be found in quite small places. As an instance I may mention

the famous Black Dike Band, composed of men employed in the mills of Messrs. Foster at Queensbury. It was formed in 1855, and has won £7,500 in prizes at contests. Queensbury is a mill village with about 6,000 inhabitants.

VITAL STATISTICS OF BRADFORD, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births over Deaths.	Deaths under one year per 1,000 born.
280,161	23·06	16·7	6·3	168

MISCELLANEOUS STATISTICS.

Police Force.	Liquor Licences.	Proceedings for Drunkenness.	
391	1,124	508	
Churches (Established).	Theatres.	Newspapers.	Public Libraries.
45	4	8	14

SHEFFIELD.

At Sheffield, one passes into a very different industrial sphere. It is wholly a metal town and, I think, the greatest of all metal towns. Textile manufactures have been tried there—silk and cotton—but they did not flourish. I do not know why, except that the *genius loci* is against them. The fact illustrates the truth that industries cannot be planted here or there at will, independently of the natural conditions. Yet it is hard to say why Bradford should have developed wholly in one direction and Sheffield wholly in another. They are not many miles apart, their topographical features are curiously alike, the ground yields the same gifts—coal, iron, stone and water—and their history is very similar. In both cases it goes back to a very remote period, probably to pre-Roman times, followed by a feudal over-lordship; both were centres of conflict in the Parliamentary Wars of the seventeenth century, both obtained early reputation for their manufactures and experienced the same rapid expansion under steam. The differential circumstances which determined their fortunes were probably the absence of grazing land in the Sheffield district, which was rather covered with forest and heath, and the presence there of numerous small hill streams, suitable for turning grind-

stones, precisely as in the Solingen district of Rhineland. Arms and domestic cutlery were undoubtedly the earliest of the Sheffield industries, and the skill of the people was developed in that direction and fixed by inheritance. The cutlers had the material, iron, they had water-power for their wheels, fuel and water for their forges. Sheffield "thwytles" are mentioned by Chaucer, and no doubt the craft had then been long established. Possibly it derived an impetus from the Crusades, by the importation of skilled artificers from the East, for Richard I. gave the heiress of Sheffield, who was a ward of the Crown, in marriage to Gerard de Furnival, one of his Knights—an incident which may well have suggested some of the episodes in *Ivanhoe*. It was to Sheffield that those refugees from the Netherlands, who followed the same craft, were sent in the reign of Elizabeth. The Corporation of the Cutlers was formed in 1624 by an Act of Parliament "for the good order and government of the makers of knives, sickles, shears, scissors and other cutlery wares in Hallamshire and parts near adjoining". The industry was no doubt distributed along the streams in the neighbourhood. For more than two centuries the Master Cutler for the time being was the head of the local community, for it was not until 1843, when the area now forming the borough already had a population of over 110,000, that Sheffield became incorporated and provided itself with a municipal government and a mayor.

During the seventeenth century the place increased but slowly. When packhorses were almost the only means of transport no large expansion of the market was possible. A survey in 1613 returned the number of inhabitants as 2,207, of whom the most wealthy were "poore artificers, not one of whom can keep a team on his own lands and not above ten who have grounds of their own which will keep a cow". It was, in fact, a village consisting entirely of handicraftsmen. In 1736 the population had increased to 9,695; if the neighbouring villages of Brightside, Attercliffe, Ecclesall and the Hallams, now part of the borough, be added, the total was then 14,105. In 1700 a town hall had been built for the transaction of business and other public purposes. In 1750 an enterprising gentleman of

the name of Broadbent gave a marked stimulus to the export trade by opening up direct communication with Continental markets, and about the same time the river Don, which runs through the town, was made navigable from its junction with the Ouse to within three miles of Sheffield. Water communication with the North Sea was subsequently completed by means of a canal. In 1760 the first stage coach to London began to run; and in 1786 the first grinding-wheel driven by steam was erected. This was several years before the effective application of steam to textile manufactures.

Meantime the process of electro-plating had been discovered by a mechanic named Bolsover, and this proved the foundation of a second metal industry, which has flourished ever since. "Sheffield plate" soon acquired a reputation, and then came Britannia metal in imitation of it. The manufacture of files, which is a third branch, probably grew out of the cutlery trade, for the two are found together in the Berg country, which is the corresponding district in Germany.

But all these industries were to be overshadowed in magnitude by the great steel works which came later. Like the corresponding works at Essen, they owe their origin to the invention of cast steel. The two stories are curiously alike. In both cases the manufacture of bar steel for small articles had been carried on in the neighbourhood for centuries by rule of thumb; in the eighteenth century came the development of cast iron, to be followed by cast steel. Sheffield took the lead in point of time. The father of the iron trade there was Samuel Walker, the son of a working nailer, born in 1715, at Ecclesfield. He started the "Old Nailer Smithy" with his brother Aaron, and the record of their business contains the entry for the year 1741-42: "We made about five tons of castings, I think". The output increased year by year and in 1759 it exceeded 430 tons, valued at £11,000. This firm, which moved in 1746 to Rotherham, made cannon for use in the American War and supplied the ironwork for Southwark Bridge, opened in 1819. Meanwhile Huntsman had in 1770 invented the process of casting steel ingots from crucibles, which remains one of the leading specialities of Sheffield to

this day. His foundry, or the spot where it was, is still pointed out in the heart of the town. The great works arose in the nineteenth century and developed with the growth of railways and ship-building for which they supplied materials, aided by numerous inventions including the steam hammer, the Bessemer converter, the hydraulic crane and the open-hearth furnace. The Cyclops works, now Cammell, Laird & Co., Ltd., date from 1842, when Messrs. Johnson and Cammell, who had carried on a small business in the town, moved to the present site near the railway. Their first order was for railway springs, and they began in a modest fashion with an output of a ton a week. About twenty years later they were employing some 3,000 hands. T. Firth & Sons established their works in the same neighbourhood in 1849. The Atlas works (John Brown & Co., Ltd.), followed in 1856. Mr. Brown was the inventor of a buffer spring and one of the objects of the works was to manufacture them. He also contributed largely to the development of the local ore by erecting a number of puddling furnaces. When rolled armour plates were introduced about 1860 or a little earlier, these firms made Sheffield the greatest seat of the industry, and it retains that position to-day. The amount of Bessemer steel turned out at Sheffield had reached seventy tons a day before the exhibition of 1862. The other great works of the same character (Vickers, Sons & Maxim, Ltd.), were established in their present home in 1867; but the firm had existed before, originally as Naylor and Sanderson, and later as Naylor, Vickers and Co. The name Naylor suggests a descent from one of the old hand industries of Sheffield. Another prominent concern is Hadfield's, which has recently borne witness to local vigour and enterprise by the production of manganese steel and other metallurgical advances. The number of persons employed in the principal industries was in 1901: Iron and steel and engineering, 23,154; cutlery (including saws), 15,609; electro-plate, 6,934; file-cutting, 5,266. There are also some other small iron industries—wire, nuts and bolts, stoves, etc.—and some large coal mines within the borough. Between 3,000 and 4,000 men are employed in coal-mining. Women are largely employed in electro-plating (3,576), cutlery (2,548), and

file-making (1,399), but the great majority of them are unmarried girls.

As an industrial town Sheffield presents some peculiarities. The factories and workshops pervade it; they are scattered about everywhere, even in the very heart of the city. I do not know any great manufacturing town in which a precisely similar state of things is found. There is usually a more or less defined area in the centre devoted to other purposes and free from factories, which are rather grouped on the outskirts or in some special position, as along the river at Elberfeld-Barmen, but no such area can be defined at all in Sheffield. The larger and newer works are grouped on the outskirts, it is true, and chiefly along the railways in the valley of the Don, where the river flows eastward out of the town; but the older ones are everywhere. There is nothing in the nature of a plan about Sheffield; it has no *place* or central space with the principal public buildings and streets near it; it hardly has a principal street at all, and that which there is rather runs away from the centre. This is not said in a depreciatory sense. The peculiarities of Sheffield lend it character and are very interesting. They arise out of its past, and quite plainly tell the story. The old streets are narrow and of a unique irregularity; they present all curves and angles and run in all directions. This marks the old cutlers' settlement, and it is not a mere coincidence that Solingen is built on the same planless plan. It is a small town and still quite old-fashioned, but one can see that Sheffield was once exactly like it, and why. Both are very hilly and the streets go all ways, because once little streams ran down the hills and the craftsmen fixed their wheels wherever it was convenient. As one passes from the centre to the circumference one moves also from the old to the new, and the character changes. The streets become long and straight and ordinary. The town has climbed the hills which once surrounded it, except for the eastward opening in the river valley. In some directions the streets run bare and ugly up the hill, but in others there are extensive woods and playgrounds. Westward, following the general law, lie exceptionally attractive suburbs, where the wealthier residents live. No doubt the reason why the best residential quar-

ters always move out in a westerly direction is that the prevailing wind blows from that quarter, and the people who can afford it choose the windward side to escape the smoke. Changes are taking place too in the more central area. Streets are being widened and improved, and new public buildings are being erected. St. Paul's Church and the new Town Hall together form a striking group on the chief thoroughfare, where the best shops are. Sheffield is in process of becoming a handsome town in that direction, or handsome for England. The Town Hall, built at a cost of £180,000, is very effective, though not quite so effective, I think, as that of Elberfeld, which cost just the same.

It cannot be denied that improvements are badly needed. Much of the housing is very unsatisfactory. The houses in the inner areas are old and insanitary, and the nuisance from smoke is very great. In the medical officer's report for 1901 I find that the number of premises where sanitary defects were found was 9,061; twenty-nine dwelling-houses were reported "unfit for human habitation"; forty-nine "dirty"; ninety-six "overcrowded"; and 1,116 "damp or dilapidated". The proportion of cottage dwellings is considerably less than in any of the industrial towns previously described, as the following figures, compiled from the census by the medical officer, will show :—

Town.	Percentage of small houses.
Sheffield	50
Salford	54
Blackburn	54
Manchester	55
Bolton	59
Halifax	61
Bradford	68
Huddersfield	68
Oldham	73

There appears to be some correspondence between this housing factor and the amount of infant mortality. In Sheffield the mean figures for fourteen years (1888-1901) is 184 to 1,000 births, which is much higher than in the Yorkshire textile towns, where a far larger number of married women are employed in factories, but where the proportion of cottage housing is also higher. And it is

significant that infant mortality reaches the highest point of all at Preston, where the proportion of small houses is very low, only 40 per cent. In Blackburn and Salford, which come next to Preston in regard to infant mortality, the proportion of small houses is also comparatively low. The facts are not sufficient to justify a confident conclusion, but so far as they go they suggest that the highest infant mortality is found where factory employment of women is combined with tenement housing.

I do not wish to overstate the case with regard to house accommodation in Sheffield. There are good working-class houses ; indeed the newer ones are very good, but the rates are high and consequently rents are dear. Inferior four-roomed houses in the older parts of the town may be had for 4s. a week, but the statement of a very intelligent workman was that "no decent four-roomed house could be got for less than 6s. a week". He had tried to get one of those built by the Corporation, but the rent with rates was 7s. 6d. a week, and beyond his means. The density of population for the whole borough is 17·4 to the acre, but in the most crowded districts it rises to 137·6 to the acre. The average number of persons to a house is 4·8, and of the population occupying houses of less than five rooms 21 per cent. were overcrowded in 1901.

With regard to smoke Sheffield is, I think, the worst of all our towns. The great source of the nuisance is the large steel furnaces. Fortunately they lie on the eastward side and to leeward of the prevailing winds, so that the smoke is more often blown away from than into the town ; but in their immediate vicinity it is exceedingly bad. It comes down the street in dense waves that seem almost solid. Efforts are made to stop it and some improvement has been effected, but the problem is not easy. The medical officer remarks on the subject : "The attitude which has hitherto been taken up by the smoke producers in Sheffield as regards these furnaces is that a manufacturer may send out as much smoke as he likes, whether this smoke is preventable or not, and also that any interference with the amount of black smoke which he may desire to send out would ruin the trade of the city. The contention is often put forward that it is to the interest of the steel manufac-

turer to prevent unnecessary black smoke on account of the loss that this occasions. In actual practice this is not the case. It is found that one workman will produce enormously more black smoke than another when using the same furnace and the same materials. Again, the same workman will produce much more smoke with one variety of coal than with another. Observations extending over a long period and on various chimneys tend to confirm the opinion that much of the black smoke now sent into our atmosphere from metallurgical furnaces is preventable without in any way endangering the quality of the steel."

The peculiarities of the town, derived from its past, extend to the factories, which are also to a large extent old-fashioned. The cutlers' trade, in particular, clings with singular tenacity to the old conditions, and it enables one to realise in some degree what they were in the days, lamented by theorists, before the rise of the detested "factory system". It is still carried on very largely by men working at home or in small workshops under small employers, or "little mesters" as they are called in the vernacular. The sanitary authority has 1,200 such workshops on the register. Many of them are in large tenement buildings, the owners furnishing room, power and light, for which the workmen pay rent. Here they carry on for the manufacturer one or other of the various distinct processes involved in the making of cutlery, and are paid by the piece. The health conditions are for the most part very antiquated and often exceedingly bad, if judged by modern standards; many of the premises are old and dilapidated. There are also regular factories, in which all the processes are carried on and a large number of hands employed; here the conditions are better though the old method remains. Some of them are very picturesque. The forges, for instance, in a factory, are like a little village, and remind one of a scene from the opera more than anything else. Every man has a little house to himself with his forge, bellows and water-tank at the side, and his anvil in front before the open window. Here he plies his craft exactly as his forefathers did centuries before, and a very skilled craft it is. The hammering out of a knife-blade from a bar of steel and adjusting its temper, by the ordeal of fire and water,

precisely to the particular purpose for which it is intended, require a hand, an eye and a judgment that no machinery can replace or imitate. Machine-made cutlery is rubbish, as every traveller in America knows to his cost. Grinding is another highly-skilled craft and, unfortunately, a very unhealthy one. In dry grinding the dust sets up chronic bronchitis and emphysema, and in wet grinding the damp fosters phthisis. Much has been done in recent years to improve the conditions of work, and grinders live much longer than they did formerly; but the industry is carried on mainly by men working on their own account and paying rent for their "stalls," or the stones at which they sit. This makes the enforcement of better conditions a difficult matter; it entails interference with the workmen, who are the "occupiers" and therefore responsible in the eye of the law. In fact, the more nearly the conditions approach to the old method of home work the worse they are and the more difficult to improve. Another Sheffield trade and a still more unhealthy one—file-cutting—emphasises the same truth. Speaking of lead-poisoning in this trade, Dr. Thomas Oliver observes :—

"While it is to the fact of the work being conducted on a lead bed, and the want of personal cleanliness on the part of the file-cutter, that plumbism is mainly due, there are, as seen in Sheffield, contributory causes in operation which tend to increase the harmfulness of the occupation. One of these is that file-cutting is often a home industry. The work is frequently carried on in the living room or kitchen of a dwelling house. Domestic and other duties come to be disregarded by the mother, for she, no less than the other members of the family, interruptedly lends a hand to increase the income of the home. Readers of this paper are prepared to learn that work under these circumstances is usually carried on in houses of the poorest description and that, as a consequence of the dangerous character of the occupation, the unhealthy atmosphere of the workroom and the constitution of the workers having become undermined through poverty, lead poisoning is not only extremely severe, but may affect those who are simply living in the house and not actually engaged in file-cutting at all."[1]

[1] *Dangerous Trades*, p. 344.

Hand-cutting and home work are, however, being rapidly superseded by machine cutting in the factory, and with them lead-poisoning will disappear. The making of files by machinery is one of those importations from America which have been resisted by the conservative English workman, although he can earn more money more easily and without danger to health by the new than by the old process, and although the very existence of his trade is menaced by American competition. I refer to this subject again in the chapter on Trade Unions.

In the great steel works the conditions are, of course, entirely different; but these too cannot be exonerated from the charge of being antiquated. The newer workshops, and notably those of Vickers, Son & Maxim, are quite admirable in every respect and are not excelled by any shops of the same kind anywhere; but some of the departments in the other great works are quite out of date, not so much in equipment as in construction and organisation. They are dark, dirty, ill-kept, inconvenient and exposed to the weather. But the reader must not infer from that statement any charge of apathy or incompetence on the part of the management. On the contrary, I have nowhere been more impressed than at Sheffield by the knowledge, mental alertness and general capacity to hold their own, of English manufacturers. Nobody can tell them anything they do not know about their business. The truth is that the works are old; they are not ruinous or dilapidated but merely out of date. They require re-organising, and that process is going on. There is no lack of energy or of knowledge. The plant has already been remodelled to a large extent and includes many of the latest appliances, such as electric cranes, gas furnaces and hydraulic presses of the largest capacity. It is a great business that is carried on here, and the very antithesis to the ancient handicrafts preserved in the cutlery trade. Of all the processes of modern industry none are so impressive as those which deal with great masses of metal such as form the basic material from which ships of war are fashioned, armed, armoured and engined. From the melting of the steel in the furnace till it boils and bubbles, to the setting up of the finished product, the work is on a Titanic scale, and mythological names—Atlas, Cyclops and

Vulcan—seem truly appropriate to the places where it is carried on. Blocks of solid steel weighing fifty, sixty, seventy tons or even more are the raw material. Such a block is swung in and out of the furnaces, moved hither and thither, pressed, flattened, rolled, bent, rounded, drawn out, bored, tempered, planed, drilled, sawn asunder and much more, until after months of manipulation it emerges as the breech of a great gun, or the crank of a monster engine or a piece of armour plate several inches thick, curved to a nicety to fit its place and so hard that the sharpest steel spike struck with a sledge-hammer leaves no mark on the surface. The appliances for producing these things are of a power which can hardly be realised and enormously costly. Perhaps the most impressive sight in all the wonderful series is the simple squeezing of a block of steel weighing fifty or sixty tons under the hydraulic press, which may be of 5,000 or 10,000 tons capacity. The mass of metal, white hot, is lifted from the furnace, swung to the press, lowered exactly into its bed under the silent monster, which betrays nothing of its nature or purpose, and looks like nothing in particular. Then a man pulls a lever or turns a handle and down it comes quite slowly, evenly and without a sound. When it reaches the glowing mass underneath, nothing happens, only the press does not stop; on it goes slowly, evenly and quietly as before, the solid steel shrinking under it before your eyes. It is the most wonderful exhibition of power without fuss that nature or man has yet achieved. There is power in the Deutschland's engines, in a 5,000 volt dynamo, in the firing of a great gun or the bursting of a charge of dynamite; there is power immeasurable in Niagara falls, in a hurricane of wind and in a flash of lightning; but in all these things there is a tremendous fuss. The hydraulic press crumples up a lump of solid steel several feet thick with a sort of silent, off-hand, sleepy indifference, as if it were doing nothing at all.

These great works form a tempting theme, but probably enough has been said for my purpose to indicate the nature of the industries carried on at Sheffield and the conditions prevailing. Wages are good. A large proportion of the men employed in the steel works are members of the Amalgamated Society of Engineers, which has seven branches in

Sheffield, and the standard rates are higher than in any of the large centres except London. For smiths, fitters, turners, millwrights and coppersmiths the standard is 38s. a week ; for pattern-makers, 40s. ; for planers, borers and brass-finishers, 34s. Head-men earn up to £15. The week is fifty-four and forty-eight hours. In cutlery piece-work obtains, and earnings vary accordingly, but average hands make about 37s. a week, girls from 9s. to 12s. File-makers earn considerably more, up to 50s. or more. Some forty years ago Sheffield was the scene of the worst outrages that ever damaged the cause of trade-unionism, but the unions are now quiescent.

Some points still remain to be noticed about the town. In spite of hilly ground and narrow irregular streets, Sheffield has a good service of electric trams ; for short distances it is the cheapest I have met with anywhere. There are seven parks and nine recreation grounds, some of them having been presented to the town by the Duke of Norfolk and other wealthy persons, the rest have been bought by the Corporation. The covered markets are numerous and remarkable. The tide of life on Saturday afternoon and evening in these places and the adjoining streets is more striking in Sheffield and Bradford than even in the Lancashire towns. The people fill the streets so completely that there is no room for any other traffic. The number of endowed charities of various kinds is exceptional. An ancient institution is the "Shrewsbury Hospital," founded in 1616 by the Earl of Shrewsbury for aged pensioners, and there are some forty others, including two large general hospitals, one for children and a fourth for women only, in addition to three infectious hospitals maintained by the municipality. But there is a much older charity than the Shrewsbury Hospital. In 1297 the third Lord Furnival founded a trust which now brings in about £7,000 a year, and is administered by a body of trustees for the benefit of various benevolent institutions and the furtherance of education by means of university scholarships open to boys and girls educated at Sheffield. In the commercial affairs of the town the Cutlers' Company plays a prominent part, conceded by traditional right and sanctioned

by law. It enjoys the exceptional privilege of being the registering authority for trade marks on all metal goods in the district. In cutlery the system of trade marks dates from the Middle Ages, and is an important matter to-day. Inferior foreign cutlery often bears the name of Sheffield, but that is not always the fault of foreign makers. Sheffield people import the stuff and put the name on. Consequently the trade mark becomes an essential guarantee of good quality. The Cutlers' Hall contains a fine suite of rooms, which are used for all sorts of entertainments, public and private. The first hall was built in 1638, the present one dates from 1832, but it has been much enlarged in more recent years.

Among the educational institutions bearing upon industries is the technical department of the University College. The principal subjects taught are engineering, metallurgy and mining. The laboratory installation for engineering and metallurgy is exceptionally complete and the course of instruction very practical. The manufacture of steel, its chemical composition and physical properties are nowhere more thoroughly taught. There is also a School of Art, in which the artistic handicrafts are taught, but cutlery seems to depend on the old school, namely, the forge and the workshop. The industry is said to be in some danger of decline from a falling supply of skilled labour. It has been hard hit by the American tariff, which is prohibitive, and by German competition, which constantly improves in efficiency.

With regard to elementary education the distribution of school accommodation in 1901 was—Board Schools, 47,490; Church of England, 19,639; Roman Catholic, 4,471; Wesleyan, 2,404. The denominational schools, therefore, represented considerably more than one-third of the whole. There are about 260 places of worship, of which thirty-eight belong to the Church of England. The Wesleyan Methodist denomination is particularly strong.

Sheffield is, of course, an important railway centre. The Midland Railway runs right through the great steel works and has an immense mineral depôt hard by; but the passenger stations are inconveniently situated.

Vital Statistics of Sheffield, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
382,334	33·0	20·4	12·6	202

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Convictions for Drunkenness.
—	1,796	1,219

Churches (Established).	Theatres.	Newspapers.	Public Libraries.
38	6	12	5

Bradford and Sheffield have been selected for detailed description as representing the Yorkshire textile and metal industries respectively; and some of the other large manufacturing towns have been mentioned in passing. I cannot spare the space for a full account of any of them, but a few observations on the most important must be added to give anything like an adequate conception of the industrial resources of the county.

Leeds is not only the commercial capital, as I have already said, but also a great manufacturing centre. It ranks fifth among the towns of England, having a population of 428,968 in 1901. It is an ancient seat of manufactures, and particularly of woollen cloth; but in more recent times that industry, though still large and flourishing, has been overshadowed by the growth of engineering works, in which over 20,000 men are employed. Leeds is actually the greatest centre for the production of engines and machines in the country, and it is specially famous for heavy machine tools. Another product in which it leads is leather. The number of persons employed in the wool and worsted industries is about 12,000. As a commercial and industrial centre it occupies a similar position to Manchester, but for a town so large and important the streets and shops are unusually mean, and the blackness attained by some of the principal public buildings is extraordinary even among English manufacturing towns. In other respects Leeds quite holds its own, and none of its rivals better illustrates the capacity of the industrial North to carry on a vigorous social life beneath an unattractive

exterior and to temper with intellectual and æsthetic interests the daily toil of the forge, the foundry and the workshop.

Halifax, with a population of 104,933 comes next to Leeds and Bradford among the West Riding towns, and is probably the most prosperous of them all. It enjoys the advantage of having an unusual variety of industries, including wool and worsted, engineering and machinery, cotton, carpets, dyeing and bleaching, small metal trades and chemicals. Crossley's vast carpet mills have already been mentioned. The town, romantically situated on very hilly ground, bears all the marks of prosperity and has a low death-rate, but it is also unenviably distinguished by the lowest birth-rate among all the large towns of England. In the course of twenty-five years the rate has fallen 46 per cent. Halifax conspicuously illustrates the most disquieting feature of national life in England today.

Huddersfield runs it close in this respect. Halifax, Huddersfield and Bradford form a group at the bottom of the list of great towns in regard to birth-rate. In 1901 the figures were: Bradford, 23·0; Huddersfield, 22·7, and Halifax, 22·3; and these excessively low rates are all the more striking when compared with the other three great towns in Yorkshire, thus: Leeds, 30·0; Sheffield, 33·0; Hull, 33·3. Like Bradford and Halifax, Huddersfield is a textile town, having over 17,000 persons employed in that group of manufactures About one-half are women, but only a small proportion of these—rather more than one-eighth—are married. The principal branch of textiles is woollen, as distinguished from worsted, goods. Huddersfield is the chief seat of this industry.

Middlesborough lies apart from the rest of industrial Yorkshire, both geographically and otherwise; but it is too important to be omitted altogether from our survey. Situated in the north-eastern corner of the North Riding, it is separated by the whole length and breadth of the county from Sheffield, which lies in the south-western corner; and, unlike the rest, it is a modern town and a port.

Its industrial importance is due to its position in the Cleveland iron district, which produces about half the ore

mined in England. The annual output of the Middlesborough blast-furnaces, which are quite up to date and second to none in equipment, is about 2,000,000 tons. This is the principal industry, but other subsidiary iron and steel works, particularly the manufacture of tubes and wire, have grown up around it. Some 8,000 men are employed in the various metal industries. The population in 1901 was 91,302 and the character of the town is seen in the unusual fact, only observed in a few similar places, such as Gateshead, Barrow and Warrington, that the males considerably outnumber the females.

The South Staffordshire District.

The York and Lancaster area, with its textiles and metals, just described, has a parallel in the Midlands, where Birmingham corresponds with Manchester or—more nearly, perhaps—with Leeds, Leicester with Bradford, Kidderminster with Halifax, Wolverhampton and its neighbours with Sheffield. I do not mean to say that the parallel is exact; the industries and other features are different; but there is a general resemblance. We have here, too, a fairly well-defined area containing a number of large and small towns which are the seats of textile and metal manufactures, exhibiting the same tendency to specialisation and characterised broadly by the same features. I do not think it worth while to give even a brief account of all of them. It would add very little to the picture already drawn, and would be to a large extent mere repetition. Industrial life in the Midlands is in its main features very similar to that of the North. But there is one region in this area which ought not to be passed over for two reasons. It differs considerably from anything yet described and it represents a class. I call it the South Staffordshire or Wolverhampton district, but it is better known as the Black Country. That name, however, is misapplied to the towns and centres of population here situated. They really form a sort of ring round the "Black Country" proper which is a remarkable area of coal and iron, once active but now worked out. It is a scene of unspeakable desolation. The face of the land is covered with vast mounds of cinders, shale, slag and other

refuse, with deserted coal-pits and ruined works standing beside them. Once the whole region throbbed with life, and by night the red glare of the furnaces lit up the murky sky. Then it was called the Black Country appropriately enough. It is black still but with the blackness of a fire burnt out and more weird than before; for to the defacement of the earth and the disappearance of meadow and tree beneath mountains of refuse is added the depression of silence and decay. A sense of death hangs over the deserted remains of a once busy scene; and as one skirts this strange region in the misty twilight of a winter afternoon, one seems to be looking out over the approaches to hell itself.

But the towns which lie round its edge are still the seat of a vigorous life. They are not large; Wolverhampton, the largest of them, had less than 100,000 inhabitants at the last census, and most of them are much smaller. They form a chain of small and medium-sized towns wholly industrial in character. The following list gives the principal ones and their respective populations (1901):—

Town.	Population (1901).
Wolverhampton	94,487
Walsall	86,430
West Bromwich	65,175
Dudley	48,733
Tipton	30,543
Wednesbury	26,554
Bilston	24,034
Willenhall	18,515
Darlaston	15,395

Some of these names possess a minor degree of fame, but most of them are probably quite unknown to the reader. The smaller towns are very humble places, but industrially they form an interesting and characteristic group. With the exception of Walsall, which carries on the manufacture of saddlery upon a large scale, they are given up to iron, steel and coal, and more particularly to the small iron industries, which are of a varied character. The following table, which gives the number of males over ten years of age in 1901, shows broadly the distribution of the industries:—

	Iron and Steel.	Engineering.	Miscellaneous Metals.	Cycles.	Leather.	Coal and Shale Mines.
Wolverhampton .	1,640	3,467	4,827	1,231	109	88
Walsall . .	1,535	2,332	2,098	211	5,644	2,487
West Bromwich .	2,745	3,052	2,880	559	—	1,179
Wednesbury .	1,431	1,318	1,777	442	—	147
Bilston . . .	1,309	866	1,635	32	—	455
Willenhall . .	197	803	2,937	35	—	218
Darlaston . .	402	579	1,966	50	—	219

Staffordshire ranks second to Yorkshire in iron and steel manufactures, and first among the counties in saddlery and harness. The number of women employed is small, except at Walsall, where 3,932 are engaged in the leather industry. An immense stimulus was given to this trade by the South African War and fortunes were freely made. Factories sprang up, chiefly started by workmen, who in a short time became employers on a considerable scale. This is a modern repetition of the old process of industrial development in England. It was essentially a process of transformation from workman to employer, and it resulted in the formation of a large number of small concerns. The "factory system" was, in truth, the creation not of the capitalist but of the workman; the enterprising, intelligent, industrious and thrifty workman who started business on his own account as soon as he had saved a few pounds. The effects of the process are nowhere more clearly seen than in the Wolverhampton district, except in "the Potteries" at the other end of the same county. I am not able to give the space for an account of the Potteries, and I have chosen the Wolverhampton metal district for description partly for that reason; it must do duty for both. Although the industries are so different, both districts have essentially the same features. Both consist of a string of towns, which are all occupied in making the same class of things but are specialised among themselves within that class; both have some new and modernised factories of considerable size, but both are in the main dependent on a large number of small and old-fashioned concerns; both are inhabited by a population almost wholly industrial and living amid surroundings entirely devoid of natural attractions. In saying

this I must make an exception of Wolverhampton, which has many attractive features and on one side turns its face away from the industrial element to become an agreeable residential town merging into very pretty country. But it is an ancient place with associations remote from the manufacturing interest. Walsall, too, is different. It is a town on the make and in process of transformation. The marks of recent growth and prosperity are numerous, and the leather industry is not of a disfiguring kind. Walsall shows signs of becoming quite a superior town of its class. But the others are singularly unattractive. With the exception of some of the old seaports, I do not know any English towns more dingy and depressing. On the surface life appears here to be wholly dreary. The streets are mean; they consist almost entirely of small houses, plain, grimy and not infrequently dilapidated. There is very little green, few open spaces, no fine buildings. The factories are for the most part small and old-fashioned, and the presence of numerous foundries fills the air with smoke.

But the observer who looks below the surface finds this appearance deceptive, and the more carefully he looks the more clearly he sees that such external features have not the importance we are apt to attach to them. What people really like and miss is what they are used to. An eye accustomed to trees, fields and flowers finds these places dreary, but the natives do not. It is the fields which they find dreary. Hence much misplaced pity and vain effort. Kind-hearted persons who feel the charm of space and verdure fancy the townsfolk pine for these things, but it is a mistake. I remember an old 'bus driver, who had driven along the streets of London for sixty years. In all that time he had never been south of the Thames, and had only once been out of London. He then had a week's holiday, and went into the country to some relatives, but after three days he could stand it no longer and went back to the streets. With individual exceptions town-dwellers have no sympathy with country things; they love the pavement and the long rows of identical houses. Any deviation is distasteful to them. I have known the people in a growing London suburb petition to have trees cut down because they broke the well-loved uniformity of the streets to which they were

accustomed in the more urban quarters whence they came. The speculative builder who begins the process of "developing an estate" by destroying every tree on the ground, and goes on by making every house exactly like every other, understands his clients better than those who abuse him. There was one of some note who did not follow this rule. He left the trees, built separate houses of good materials and design and left space about them; he was put in jail. His successor, who did the opposite in every respect, is in Parliament. Truly what is one man's meat is another man's poison. An expedition into the country pleases the townsman as an expedition, but if you observe the behaviour of townsfolk in any resort you will find that very few indeed care to penetrate more than a few yards from the highway. They still herd together near the main road and the public-house and keep in the crowd. Sylvan solitude repels them. So, too, the bicyclists who ride out of town. They pass by fields and woods and rarely turn aside or stop for the most exquisite scenery; they pound for ever along the road to a greater or less distance according to their ambition, pile their machines up at the public-house which is their goal, and then pound back again. The children, too, care nothing for the country. They like going because children like going anywhere, and I have no doubt that the country holidays on which so much effort is now spent are good for their bodies and minds; but let no one think they pine for the fields. The street is their real delight and favourite playground, as a very acute and experienced observer has pointed out.[1] They prefer it to the parks, and are never so happy as when playing in the gutter. Even country children prefer the village street to the fields and make it their chief playground, heedless of bicycles and motor cars. In truth it is the country that town-dwellers find dull and dreary; they have no feeling for country things, which are to them only things to be misused and destroyed. A very brief experience at the best time of the year exhausts the interest. Those of them who go into domestic service show the real bent. Be the place never so good they will not stay in the country.

[1] *Studies of Boy Life in Our Towns*, edited by E. J. Urwick.

And here in these Black Country towns, which look so dreary to other eyes, the people need no pity. I came across a curious proof of affection for the locality in the United States. At one of the large steel works near Pittsburg was a man who came from Wednesbury, which perhaps is the dreariest of them all. He occupied a superior position and earned a good salary easily enough; but his thoughts turned to Wednesbury. "If any one would give me five dollars a week," he said, "I would go home and live like a gentleman." He was a travelled and intelligent man of his class, and he was quite satisfied with the Black Country and the way of living there. Men who have made money, and are well to do, go on living there in the same small way from choice. They enjoy life in spite of their surroundings; and it is a pretty vigorous life. I have nowhere seen men of finer physique than many of those working in the furnaces, forges and rolling mills in these towns; and the birth-rates are far higher than in Lancashire and Yorkshire. The mean annual birth-rate in the ten years 1891-1900 was in the Staffordshire urban districts, 35·5; at Wolverhampton, 33·87; at Walsall, 35·2; at Willenhall, 38·5; and at Bilston, 41·5 per 1,000. There is plenty of vitality here, and very little evidence of decline. So late as 1899 the birth-rate at Bilston was 40·5 per 1,000. That is a remarkable fact in view of the really alarming decline which has taken place in Yorkshire and Lancashire. Nor are these higher birth-rates accompanied by correspondingly higher death-rates, but rather the contrary. For the same ten years the mean annual death-rate was—Wolverhampton, 21·22; Walsall, 19·8; Willenhall, 20·9; Bilston, 22·4, per 1,000. Consequently the mean annual excess of births was—Wolverhampton, 12·65; Walsall, 15·4; Willenhall, 17·6; Bilston, 18·1 per 1,000. Here we have a vitality approaching that of the German industrial towns, or not far short of it. Thus we see that an uninviting exterior may conceal more real industrial strength than a far fairer outside. In 1901 the death-rate at Wednesbury was only 14·5 per 1,000, and the infantile mortality only 154 to 1,000 births.

In one of the smaller towns a clergyman gave the people a rather remarkable character. "Religion is re-

garded here," he said; "the people are religious minded; they are a capital set, honest, truthful and fearless; what they undertake to do they always carry out." This gentleman has an unusually real and intimate knowledge of his people. Brought up as an engineer, he has worked at the bench alongside of the men, and he is as free from sentimentality about them as he is faithful to the obscure but satisfactory work to which he devotes his great ability—a rare and fine man. The whole place would be called a slum if it were in London. Housing is bad, though cheap, the rent for a four-roomed cottage being 4s. 6d. a week. But, as my clergyman truly observed, the people like squalor. They remain in wretched houses when they have become comparatively wealthy, and take in lodgers when they have neither need nor room for them. But they are well fed and not very much given to drink.

In consequence of the variety of industries carried on it is not easy to summarise the facts about wages. The engineers' trade union standard is low in this district, being 32s. a week for most groups. The week is fifty-three and fifty-four hours, and I found that to hold good of the local industries in general. Blast furnace men, puddlers and steel workers earn more—up to £2 and £3; head men get as much as £8 a week. But in the smaller metal trades, which are the most characteristic and interesting, earnings are lower. Several authorities independently gave the average as 25s. a week. Girls earn from 7s. to 15s., women up to 20s. or even 25s. Among these trades perhaps the most prominent is locks and keys, the seats of which are Wolverhampton and Willenhall. It affords a typical and highly instructive example of an old English industry threatened by foreign competition and newer methods of manufacture, but clinging to the old. American ingenuity has devised a new type of locks and keys eminently characteristic of the national genius in invention. In place of the hand-made, solid and durable but heavy and cumbrous articles manufactured in this country, they produce a light machine-made one. It is not nearly so strong, but it answers the purpose and is far more convenient. American locks are already largely in use in England, and their merits have only to be generally known for them to become

universal. It is fortunate for the English trade that people are so conservative in domestic matters; but for this it would be in a very bad way. It stands, indeed, on the edge of a precipice. The Germans have learnt the lesson and are in the market too. The English manufacturers are perfectly aware of the situation and have introduced American machines and methods, but the workmen dislike and resent the change. They ridicule foreign competition. While I was in the neighbourhood they struck for a 10 per cent. rise of wages. A case of American and German locks was placed in the Free Library at Willenhall for their instruction, but the only notice they took of it was to threaten the librarian with personal violence until he removed it. "Why, these locks are cast," they cried with supreme contempt on being shown some; "if you drop them on the ground they would break". They very likely would, but it is not the function of locks to be dropped on the ground. In its proper place a cast lock will last just as long as a wrought one. At the same time the English workmen have lost the skill they once possessed in making their own locks. An old manufacturer in Wolverhampton, who had himself been brought up at the bench, gave me an interesting proof. He showed me locks made thirty years ago which were far better than any made now, but those made fifty years ago were still better. They cannot be reproduced to-day. A dealer in London sent him two old locks and wished to have a number made exactly to sample, price was no object. The manufacturer sent for his best workman—and there is no better, he said, in the trade—showed him the locks and asked him to make the set ordered. The man looked at them and said: "What am I to get for them?" "Name your own price." "Well, I would like to have a good look at them first." "All right, take them away." He took them away, came back a day or two later and said: "I can't do it. These locks are too good; I can't make one like them." The reason given for loss of skill is that men are not brought up to the work as they used to be, through abandonment of the apprenticeship system. The same manufacturer, who had been in German workshops, said that the German mechanics are now better than the English.

I am afraid the men in this district are not very intelligent or enterprising. Another manufacturer, who employs about 300, had made a standing offer of £50 for ideas from workmen; but in two years it had not produced a single bid. He also offered to take twenty men to the lakes if they would save £3; not one saved a penny. The average earnings of men in his factory are over 30s. a week. But I will give the other side fairly. Another manufacturer gave his workmen a different character: "They are a capital, intelligent set of men," he said. This, however, was not in the same trade or in the same place, though next door to it.

An important branch of manufacture in the district is that of tubes. It is carried on at Wolverhampton, Walsall and elsewhere, but premises and plant are generally somewhat old-fashioned; and the same must be said of the large iron and steel works. On the other hand, I have nowhere seen a more modern or better appointed factory than the electrical engineering works of Thomas Parker, Ltd., at Wolverhampton. The largest concern in the district is, I believe, the Patent Shaft and Axle Company's works at Wednesbury, where about 3,000 men are employed. They make a variety of things, including bridges, for which the Company has secured some notable contracts in competition with American works. Bridges are also made at Darlaston. Nuts and bolts, rivets, nails, chains, wire-netting, gas-fittings, rasps and files, curry-combs, tools, vices, brass cocks, enamelled plates and letters and hardware are among the miscellaneous metal manufactures of the district. Wednesbury is famous for nuts and bolts; Bilston for hardware. There are two or three points of interest about the last. Frying pans and the like, which used to be hammered out, are now stamped or pressed; but the knowing housewife still looks for the marks of the hammer, so they are added afterwards, just as a little sand is added to sponges. The tinning and enamelling of hollow ware is a "dangerous trade" under "special rules," and I must say it needs them. The articles are plunged into a trough or tank containing molten lead and tin, from which dense fumes arise. They are very difficult to avoid, and in my humble opinion the conditions under which this process is carried on stand far more in

need of attention than the corresponding process of dipping in pottery works which has been the subject of so much agitation. It is characteristic of our haphazard national procedure that some trades are regulated too strictly, and others, more injurious to the workers, are neglected There is no system or principle in the matter; it is merely a question of clamour. But perhaps I ought to say "has been," not "is"; for there are signs of a change. The annual report of the chief inspector of factories for 1902 contains a very full report on the whole subject of the enamelling of metals with much interesting information about it and numerous recommendations. The tinning process is included in this inquiry. The authors appear to have had lead poisoning wholly or chiefly in mind. No doubt it occurs and is important; but I doubt if it is everything, and the failure to find lead in the fumes from the tinning bath does not dispose of the matter. I have seen no manufacturing process which I should personally engage in with so much reluctance. Most of the "dangerous" processes, and conspicuously those which have attracted most attention, are rendered quite innocuous by a little elementary cleanliness and care; but I should be very sorry to have to stand over the tinning bath. Lacquering is another disagreeable, if not dangerous, process; the fumes produce a singular and very unpleasant effect; but I do not find any mention of it in the treatise on dangerous trades edited by Dr. Oliver.[1] Chain-making is carried on chiefly at Cradley Heath, a small village over the border in Worcestershire, and to a large extent by "out-workers" in small domestic workshops. A considerable number of women are employed in it.

These notes though rather discursive will, it is hoped, give the reader a general idea of the nature of the very miscellaneous industries carried on in the district. The trade union report, given me in Wolverhampton, is that the Factory Inspectors do see that the law is carried out, but that factory conditions are susceptible of improvement. Complaint is made of open sheds and corrugated iron buildings, and observation supports it. As I have said, premises

[1] *Dangerous Trades*, John Murray.

are generally antiquated, though there are some conspicuous exceptions.

To turn to other conditions, the strong vitality which I have shown to exist in spite of depressing surroundings, finds a counterpart in a vigorous common life. All the towns, including the smaller ones, are completely provided with the regular municipal institutions, more completely than places of much larger populations in the South or in the London suburbs. They all have technical and art schools and free libraries, baths, electric light and electric trams. They are linked up by the electric tramway service as well as by several railroads. They nearly all have theatres; Wolverhampton has three, including a music hall, Walsall two, one of which is an extremely handsome house, and even so small a place as Bilston, with its purely industrial population of 24,000, has one. Wolverhampton has a very fine art gallery, which is much frequented; the number of visitors in 1902 was 159,818. Walsall also has an art gallery and museum. Parks and playgrounds are numerous; Wolverhampton and Walsall have each 100 acres devoted to this purpose. The people are musical too; musical societies and clubs abound.

Not less store is placed upon religious teaching in elementary schools here than in the other industrial centres passed in review. In Wolverhampton the number of school places in 1902 was—Board Schools, 5,838; Denominational Schools, 12,646, of which 9,796 were Church of England, 2,150 Roman Catholic and 700 Wesleyan. The number of places of worship is thirty-two.

With regard to housing, I have said above of one of the smaller towns that it is bad. I meant that old, dilapidated and insanitary houses are numerous there; and that is to a varying extent true of others. But I do not think that the housing in general can be said to be bad in the district. I have the reports of the medical officers for several of them before me, and they do not speak of bad housing except in the case of Bilston, where the medical officer complains of great difficulty in dealing with insanitary property. Here the infantile death-rate is very high. It is also high at Willenhall and still higher at Darlaston, but, as I have already pointed out, the birth-rates are also very

high, and high birth-rates are always accompanied by much infant mortality. The density of the population is high in Wolverhampton, but not in the smaller towns, as may be seen from the following table:—

	No. of persons to the acre.	No. of persons to a house.
Wolverhampton	26·7	4·9
Walsall	11·7	4·7
Bilston	12·8	4·7
Willenhall	14·8	5·1

The high density at Wolverhampton appears to be due to the existence of a large number of courts in which the houses are crowded together. A very remarkable investigation of these courts, which are situated in two districts, was carried out in 1901. I know of no inquiry into housing so minute and exhaustive. The principal results may be summarised as follows:—

Courts in Wolverhampton, 1901.

	East District.	West District.
Number of courts	236	148
Number of occupied houses	1,387	814
Population	5,607	3,122
Persons to the acre	384	318
Occupied houses, wholly in courts	888	561
Back-to-back houses, do. do.	228	123
Damp or dilapidated houses, do. do.	542	296
Average weekly rent:—		
Back-to-back houses	2s. 10d.	2s. 11d.
Single houses	2s. 8½d.	2s. 10d.
Through houses	3s. 3d.	3s. 3d.
Average weekly income of occupants:—		
Back-to-back houses	20s. 2½d.	19s. 9d.
Single houses	20s. 7d.	21s.
Through houses	22s. 7d.	22s. 10d.
Death-rate (per 1,000)	28·54	26·71

The mean death-rate in the whole borough was 16·69; in the courts it was 27·84. This strikes me as surprisingly low. The population includes the poorest, the density is very high and the proportion of damp and dilapidated premises very large. Within the houses, however, there was not much overcrowding. The table does not give the number of rooms in each house, but most of them contained from two to four rooms, a few five and six. The rents are very low; for some of the four-roomed houses the occupants

were only paying 2s. 10d. a week, and I find six-roomed through houses rented at 4s. 6d. The rent for two-roomed houses was usually 2s. 6d., or 1s. 3d. a room, and that appears to be the highest. Rents are altogether low in Wolverhampton, although the rates are not. I found the secretary of the Trades Council living in a very good six-roomed house at 6s. a week. He said it was exceptional, but inquiry hardly confirmed that.

Vital Statistics of Wolverhampton, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
94,487	31·9	16·7	15·2	162

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Charges of Drunkenness.
103	476	410

Churches (Established).	Theatres.	Newspapers.	Public Libraries.
14	3	6	1

Vital Statistics of Walsall, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
86,430	34·19	17·59	16·6	174

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Proceedings for Drunkenness.
78	354	251

Churches.	Theatres.	Newspapers.	Public Libraries.
—	2	—	1

Vital Statistics of other Towns, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
		Wednesbury.		
26,554	33·0	14·5	18·5	156
		Tipton.		
30,543	37·8	15·5	22·3	144
		Bilston.		
24,034	36·5	20·7	15·8	221
		Willenhall.		
18,515	35·4	20·4	15·0	211

CHAPTER III.

INDUSTRIAL DISTRICTS IN GERMANY.

The great manufacturing industries are more widely distributed and less concentrated into specialised areas in Germany than in England. This, no doubt, arises from the fact that it has only recently become a thoroughly homogeneous country. In the past each division was compelled to develop industries of its own as far as possible. Excepting, therefore, the great agricultural provinces on the north-eastern and eastern side of Prussia, there is hardly any portion of the Empire in which the leading branches of manufacture are not carried on to some extent. But the causes pointed out in the previous chapter, which tend to concentration in particular localities, have made themselves felt since the establishment of the Zollverein, the development of the railway system and the consolidation of the Empire. The great industrial expansion of the last thirty years has not been equally distributed. Certain localities, more favoured by nature than others, have acquired a constantly increasing prominence. Foremost among these is the Rhineland province of Prussia. In 1895, the date of the last occupational census, it stood first among the provinces of Germany both in textiles and in the production and manufacture of iron and steel, it was second in leather manufactures and glass, third in paper, and fourth in pottery. Next comes the Kingdom of Saxony, which was only just behind Rhineland in textiles as a whole, and easily first in cotton and wool, first also in machinery and paper, fourth in leather and glass, fifth in pottery. These two areas, which are also first in the production of dyes and fine chemicals, correspond in many respects with Yorkshire and Lancashire

respectively, and are the seat of the most formidable competition with England. I have therefore chosen them for purposes of comparison. Next in importance are Bavaria and the Prussian provinces of Silesia and Brandenburg. Bavaria stands first in leather and glass, second in pottery, third in engineering and in cotton. In Silesia, again, all the chief industries are carried on upon a considerable scale. It is the principal seat of the linen manufacture, and, as such, corresponds with Ulster; it accounts for an increasing share in the total product of Germany, and is the only district which showed an increase in the linen industry between the last two occupational censuses. In cotton, on the contrary, it is not holding its own in face of the great development of Rhineland. These movements illustrate the tendency to localised concentration in modern industry. In the production of iron and steel Silesia ranks next after Rhineland and Westphalia and has enjoyed a much more rapid rate of increase than either in the last twenty years. In machinery and engineering it ranks fifth. The province of Brandenburg, which includes Berlin, has also developed rapidly in the latter branch of industries, and in other iron and steel manufactures. The largest electrical machinery works in the world are in the neighbourhood of Berlin. The chief textile industry in this province is wool and worsted, in which it is surpassed only by Saxony and Rhineland. In pottery it ranks first, and in leather third. Of the other manufacturing districts the most important is Alsace-Lorraine, mainly by virtue of the cotton industry, in which it ranks next to Saxony. The rest are of minor, but by means negligible importance. Among them Westphalia must be counted. The greater part of this province is of an agricultural character, and resembles the North and East Ridings of Yorkshire, but like them it has a West Riding, which lies contiguous to the Rhineland border and is geologically continuous with it. This is a hilly, mining district, containing some large iron and steel works, and some considerable textile centres forming a kind of annexe to its more industrially important neighbour. The two can hardly be separated, and in what follows, some account is taken of Westphalia.

I regret having to leave Brandenburg out of my des-

criptive section, and the more because Berlin is one of the greatest manufacturing cities with some of the finest works in the world; but, like London and New York, it contains so many other non-industrial factors that I shall treat it in the same way, and dismiss it with a brief notice.

Berlin.

On the whole Berlin is less representative of Germany than are most capitals of their respective countries. It is newer, for the empire of which it is the centre is new. Until recently those centripetal currents of life which usually flow to the capital have been largely distributed elsewhere, and they still are to a considerable extent. But because of its newness Berlin embodies and expresses all the more clearly some latter-day national tendencies. In the first place it represents the worst. Vice and crime always gravitate to the capital and are concentrated there for in the larger aggregations of people the degraded find, more companions to keep them in countenance. This is conspicuously the case with Berlin, which has become the chief pleasure town of Germany and the great centre for wealthy persons in search of amusement and dissipation, with all the crew of parasites who wait upon their pleasures. Consequently the old-fashioned German virtues, to which the country owes its strength, have comparatively little hold in Berlin; the moral tone is more lax, the standard of comfort and the cost of living are higher, and the birth-rate is lower than in the genuine industrial communities. One sees here the worst results of the demoralisation caused by prosperity. The Germans have a great capacity for the grosser pleasures of the flesh, and there is no more profligate town in Europe than Berlin has become, nor one in which the vile in thought and deed flourishes more abundantly. To some extent Berlin is also representative of the best in Germany, though less so than some other capitals—London and Paris, for example—in their respective countries, it absorbs less of the intellectual life of the nation than they do, and it has no traditions; neither is it the seat of such a strenuous commercial activity as great sea-ports, like New York and London. But it does represent the most complete

application of science, order and method—pre-eminently German qualities—to public life. It is a marvel of civic administration, the most modern and the most perfectly organised city that there is. If one wanted to show some visitor from another sphere or some distinguished *revenant* from the past the most complete embodiment of modern ideas in the way of civilisation one must take him to Berlin. The sky-scraping buildings in American towns, though recently built, are not modern in spirit but just the reverse; they are survivals from a crude and lawless, if adventurous, age which is passing away. In more civilised communities the height of the buildings is regulated in the public interest, and people are beginning to find the necessity of regulation in America. In Berlin it has reached its fullest expression. The limit is the width of the street, with a *maximum* of 72 feet, and since space is enormously valuable all the buildings rise to the limit, which gives about six stories. Then the width of the streets is similarly regulated, and since the whole town is new, with some small and disappearing exceptions, it is all the same. You may go in any direction for miles, right to the very edge of the city where the building terminates abruptly in a field, and it is all the same—the same broad, clean, well-paved streets, the same tall and massive houses, the same fine shops, the same electric light, the same electric trams. It is not pretty, or picturesque, or charming, or interesting—far from it; there is too much uniformity for that, and one would almost welcome a few judiciously distributed slums as a relief. But it is pre-eminently modern, and civilised, and German. At the same time this orderly exterior conceals a multitude of evils, of which overcrowding is one, for the housing question, acute in all German towns, is perhaps most acute in Berlin, where all the world save ambassadors and such great folk, live more or less huddled together in flats and tenements, or barracks, as the Germans correctly term them.

In these features Berlin gives us the ultimate expression of urban life in Germany. Orderliness is its chief quality, overcrowding its greatest defect; and all the towns which will be passed in review, though widely differing in many respects, possess these two features in a greater or less

degree. Of them all, Düsseldorf, with which I begin, is the most Berlinised, because an exceptionally large part of it is quite modern. And yet the differences are great. There is nothing pretentious or imposing about Düsseldorf; it does not swagger and strut and bustle; its aspect is tranquil and pleasant, its buildings rather low than high, its streets quiet though full of life. Flat life prevails but there are many private houses. No town suffers less from monotony of style, and if it has no buildings of the highest architectural merit or interest neither has it any of such supreme ugliness as the Reichstag and the new Dom in Berlin. But before going into further details I must say something about its situation and the industrial Rhine Province of which it is the centre,

The Rhine Province.

The Rhineland is the most westerly province of Prussia. It marches with the frontiers of Luxemburg, Belgium and the Netherlands from Treves in the south to Cleve in the north, and it is divided into five district Governments: (1) Treves, (2) Coblenz, (3) Aachen, (4) Cologne, and (5) Düsseldorf. That is not the official order, but the geographical, beginning at the southern extremity and proceeding down the river, as may be seen by a glance at the map. The total population of the province is 5,760,000 (1900). Cologne is the commercial capital of the whole, but the two distinctively industrial districts are Aachen and Düsseldorf, of which the latter is by far the more important. It includes the lowest section of the Rhine lying within the German frontiers, and contains a whole plexus of manufacturing towns, which for the most part have a special character. The town of Düsseldorf lies in the centre of the plexus with Crefeld, Neuss, Rheydt and München-Gladbach to the west and on the left bank of the river; Elberfeld, Barmen, Solingen and Remscheid to the east; Duisburg, Ruhrort, Mühlheim, Oberhausen and Essen to the north. These towns and a number of other smaller places scattered among them are the homes of flourishing manufactures in great variety. Iron and steel works of different kinds are carried on principally in Düsseldorf, Essen Duisburg,

Oberhausen and Ruhrort; Crefeld is the chief silk town. München-Gladbach the headquarters of cotton; Elberfeld and Barmen manufacture chemicals and dyes, mixed textiles, buttons, braid, and many other things; Solingen and Remscheid make cutlery, swords, saws and files. The concentration of so many industries in one district is due to different causes; but, as I have already pointed out, the situation of old-established seats of industry, such as Elberfeld and Solingen, is most often determined by the presence of water, either for driving power or for textile purposes: that of more modern ones by the proximity of mining regions or of transport facilities by rail or water. Thus the modern industrial evolution of the Rhineland, particularly in iron and steel manufactures, which have attained such a remarkable development, is probably due in the first instance to the coal mines of the province and of Westphalia, which adjoins it on the eastern side, and in the second to the great water-way of the Rhine and an excellent system of railroads. In addition to these factors the production of steel has been greatly promoted by the invention of the "basic" processes, which facilitate the cheap conversion of the German phosphoretic ores. The extensive Rhine-Westphalian coal basin stretches eastward from the river, where the Ruhr joins it below Düsseldorf, for some thirty miles into Westphalia. Essen and its neighbours in the Ruhr valley stand upon it, but the bulk of the mining district lies over the border in Westphalia. It is a hilly region, almost given up to coal and iron. One group of smoky furnaces and tall chimneys follows another—Bochum, Hagen, Herdecke, Hörde, Dortmund, and others—interspersed with coal pits and tidy mining villages. Yet it cannot be called a "black country," and in no wise resembles the desolation of South Staffordshire, for amid all the pits and furnaces the cheerful Westphalian farms, surrounded by trees and well-cultivated fields, smile prosperously from the hillside. This brief outline will give some idea of the situation of Düsseldorf and the character of its surroundings. Most of the places mentioned are within an hour's ride or so: the most distant—Dortmund and, in the opposite direction, Aachen—can be easily visited in a day.

Düsseldorf.

It is impossible to think of Düsseldorf without pleasure. We have no such industrial town in Great Britain, and still less have they anything of the sort in the United States, unless the few small factories which have sprung up in Washington entitle that charming little capital to be called an industrial town—a proposition that I cannot admit. Indeed I should say roundly that Düsseldorf cannot be matched outside of Germany if it were not for a few places, such as Zürich and Geneva, which possess extraordinary natural advantages. Inside Germany it may be placed alongside of Hamburg, Dresden and Stuttgart; but then the two latter are the capitals of kingdoms as well as manufacturing centres, while Hamburg—certainly the handsomest of all purely commercial towns—is a free city and a mighty port with more than 700,000 inhabitants. Düsseldorf, with its modest population of 214,000 (1900), really stands alone for utility and charm combined. It is not, however, a purely manufacturing town like Elberfield or Essen, which are the proper types for comparison with Yorkshire and Lancashire; it was once the capital of a principality, it still contains a royal residence and is the seat of a provincial Legislature; it has long been a centre of art and a favourite residential town. Much of its charm is derived from a courtly past, but much also it owes to an industrial present, which has been grafted on to the ancient character, as in the case of Dresden and Nüremberg. To the one it owes its broad avenues, leafy gardens, ornamental waters, fine churches, art buildings and general air of a little capital; to the other its well-built, well-kept business streets and excellent shops, its cafés, theatres, electric trams and handsome new railway station. All these are redolent of prosperity and a well-ordered civic life, and characteristic of modern urban Germany, of which Berlin is the archetype.

The town itself lies on the right bank of the Rhine, upon level ground with a backing of low, wooded hills, which provide a popular resort and playground in summer. The river is here a magnificent stream, clear, swift-running, over 300 yards wide and forty feet deep; but strangely enough, it is not a prominent feature in Düssel-

dorf life. There are some good quays, opened in 1896, but they are not on a large scale, and I never went down to the water without wondering at the meagreness of the traffic. That may, however, have been peculiar to the winter season. As for the inhabitants, no one goes near the river, though there is a fine promenade along the embankment. This has been recently constructed; only two or three years ago, I am told, the river-side was a swamp, which perhaps explains why it still finds no favour, for these matters are governed by custom, which changes slowly. Whatever be the reason, Düsseldorf literally and ostentatiously turns its back upon the noble water-way that should be its pride. The oldest part of the town lies nearest the river, but only back windows or none at all look in that direction. In this quarter the streets are narrow and not guiltless of slums, but they are relieved by the old market-place and a good many public buildings and offices, including those of the Prussian District Government and the Rathhaus. Neither is worthy of the town. The Düsseldorf authorities have not yet built themselves a lordly palace, like the town hall at Elberfeld, but have, much to their credit, spent the money on other public improvements, and have contented themselves with somewhat makeshift quarters which have neither the picturesqueness of the old nor the convenience of the new. The Kunst-Akademie, however, in the same part of the town, is a stately palace of art.

Next to this old quarter, with its narrow irregular streets and poor population, comes a very different section, consisting of broad, straight boulevards terminating in the charming little park called the Jägerhof. This is the bit of Düsseldorf which never fails to strike every stranger, and it is indeed unique. I remember once reading a dissertation by some gentleman from Berlin on the width of streets, in which he proved to his own satisfaction that Unter den Linden is the widest street in the world. But he left out the Avenida at Lisbon, which is certainly both wider and longer and far prettier than the pride of Berlin, and I think he must have overlooked the König's Allee at Düsseldorf, also. A stretch of ornamental water runs down the middle, and

if one regards both sides as forming one whole, this remarkable street consists of two roadways and three foot pavements, all of ample width, a riding track, a double avenue of fine trees, and a piece of water twenty yards wide, spanned by numerous ornamental bridges. It is less pretentious than Unter den Linden, but incomparably more charming. Beyond this section and still further from the river lies the chief mass of the town, which is of a more ordinary character, but very superior for a place of its size. It has spread rapidly in all directions in recent years, and now reaches to the outlying suburbs. Here in the outermost ring are the works and factories, and it is in a great measure their exceptionally retired position which makes Düsseldorf so very unlike most other manufacturing towns. Although they are chiefly iron and steel works equipped with foundries, the place seems guiltless of smoke, which is more than can be said even of Dresden, where the old Frauenkirche is soot-begrimed as black as St. Paul's. Among the more notable establishments are those of the Düsseldorf-Ratinger Tube Boiler Works, where the Dürr boilers are made; of Ernst Schiess, whose heavy machine tools are famous all over the world; and Messrs. Haniel and Lueg, who employ about 2,000 men and make all kinds of engines and machinery. These firms, I regret to say, send a great deal more of their manufactures to England, and often to the very towns where the same things are made, than is at all flattering to us. I have seen heavy machine tools going to Glasgow and Barrow, hydraulic presses and steel ingots to Sheffield, crankshafts for electrical machinery to Manchester, shaft linings and a shaft borer to Kent, pumps to Middlesborough, forgings for machinery to the Tyne, and many other things. And do not let any one suppose that these things are "cheap and nasty". That phrase is absolutely out of date in regard to German products. The work is first-rate, as every English manufacturer knows who visited the brilliantly successful Düsseldorf Exhibition in 1902. The verdict of one highly competent authority, who has visited every industrial exhibition for the last fifteen years, and knows the United States as well as England and other parts of Europe, will suffice. "It was," he said, "the

finest show of machinery and tools ever seen." Nor is the export trade all "dumping" of surplus products. I found Haniel and Lueg executing more orders for England than for Germany, although they only entered the English market three or four years ago. The day before I visited the works they had received £9,000 worth of orders from England in one morning, and I have since heard that three-fourths of their output is for English customers. Besides the firms mentioned, there are many other well-appointed steel and engineering establishments, some large glass works, and a number of miscellaneous factories. Some are of quite recent foundation, and all have undergone rapid development within the last few years. From the notes published by Dr. Johannes Feig, of the city statistical office, I learn that the number of wage-earners in Düsseldorf rose from 18,761 in 1875 to 53,580 in 1895; that is to say, it was nearly tripled in twenty years, and the increase has since been equally or more rapid. At the same time the number of establishments in proportion to the persons employed has largely diminished. In other words, Düsseldorf has become a factory town, and the size of the factories is increasing.

The work-people live for the most part at no great distance from their work in the outer ring of the town or the suburbs. The rapid increase in their numbers has made housing a very difficult matter. Great efforts have been made to overcome it by building societies, the municipality and employers, but only with limited success. The whole subject will be treated separately in its proper place and can therefore be dismissed here with a brief reference. The working classes are housed in Düsseldorf, as in most German towns, almost entirely in flats. The cottage system is nearly as rare as the tenement system in English provincial towns; but in Düsseldorf the tenements are of moderate size, not more than four stories high, and in the best of them the rooms are convenient and of fair size. The rents, however, are very high. Even in those erected by the municipality the average weekly rent is nearly half-a-crown per room. The only provincial town in England in which I have found rents equally high is Newcastle. It follows that a great many families are compelled to live in two

rooms; and so great is the demand that even those in receipt of good wages are often unable to find lodgings if they have many children. Situated as it is, Düsseldorf is necessarily the centre of a great railway traffic. It lies on the main line connecting Cologne with Essen, and so with Hamburg, Berlin and North Germany at large; also on the main line from Cologne to Flushing, and so to London, distant only thirteen hours. In addition it is the terminus for numerous branch lines to neighbouring places on both sides of the Rhine; and so rapidly has the traffic developed that the very handsome central station, only opened about twelve years ago, is already inadequate. There are three subsidiary stations in the town. A network of electric tram lines further connects it with the neighbouring towns. Some of them belong to private companies, but the excellent system in the city itself is worked by the municipality. Düsseldorf has no timidity about municipal enterprise. Among the concerns carried on are water supply, gas, electric light, electric trams, parks, markets, quays, slaughter house, savings banks, mortgage business, pawn shop, libraries, baths, theatre, concert hall, orchestra, museums, picture gallery, police, fire brigade, workhouse, outdoor relief, night refuge, workmen's dwellings, sick insurance, numerous endowed charities, hospitals (general and lying-in), cemeteries, elementary, secondary and art schools. In addition to these the town contributes to the support of an observatory and a labour intelligence office for the unemployed, sends invalid children to "holiday colonies," provides for a certain number of orphans, and occasionally gives free breakfasts to poor school children in winter. And yet Düsseldorf is by no means a "Socialist" town in the German sense, which goes to show what very different meanings are attached to that word. Its sanitary condition is not up to the highest standard, since the cesspool system still prevails, although the town is sewered. Nevertheless the public health is good and the death-rate low. The place is very clean and free from smells; I have only seen house drains discharging in the open on the extreme outskirts; slummy streets are few and need some finding. In these respects Düsseldorf is markedly superior to most industrial towns.

Of the population, about three-fourths are Roman

Catholic and one-fourth Protestant, with some 2,000 Jews. With regard to education, which will be more fully dealt with hereafter, only a few points need be noted. It must be remembered that denominational religious teaching is carefully secured by law in Germany, and wherever possible separate schools for the two confessions are provided. Consequently, of the forty-two public elementary schools in Düsseldorf, twenty-nine are Roman Catholic, eleven Evangelical, and only two (suburban) are mixed. Compulsory evening continuation schools for boys of fourteen to sixteen years of age have recently been established. There were in 1902 forty classes carried on in seven schools. The town possesses no "technical" school. The engineering and mining schools for the district are situated at Duisburg, Elberfeld and Hagen, the textile schools at Crefeld, München-Gladbach and Barmen. There is, however, a municipal art-trade school at Düsseldorf with classes for drawing, painting, decorating, modelling, carving, engraving, cabinet-making, glass-painting, lithography, and other crafts. The number of students in the winter session of 1901-02 was 285.

The growth of the town since the formation of the German Empire is shown by the following census figures:—1871, 69,265; 1880, 95,458; 1890, 144,642; 1900, 213,711; 1902 (estimated), 225,984. It is the twelfth city in the Empire in point of population.

Vital Statistics of Düsseldorf, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of births.	Deaths under one year per 1,000 born.
218,112	38·0	18·7	19·3	206

Of the births 6·9 per cent. were illegitimate.

Miscellaneous Statistics.

Police Force.	Public-houses.	Churches.
286	542	41

Theatres.	Newspapers.	Free Libraries.
3	29	3

Essen.

Essen and Krupp. Two great names, famous all the world over, and deserving of fame. As the big expresses

roll into the station, which is the junction where the Berlin through trains divide for Flushing and Cologne, the name catches the eye, and many a traveller, hardly believing that this is the place of which he has heard so much, looks out of the window to get a glimpse of the great works; but few alight unless they have business to transact. In spite of its fame and its situation in one of the main highways of Europe, Essen is little known. "There is nothing to see, except the works." Well, perhaps not; and the works are not open to everybody. Yet, as I have suggested before, there is an interest in a town of this kind, with its strenuous, ordered, industrial life. It is real and human and healthy and the very heart of our age. For some minds it has more attraction than the catalogued joys of the Baedeker round, and is more worth study than the sores of a fashionable city slum. Perhaps the time will come when travellers in search of distraction will turn their attention to such places, and then the world of means and leisure will know how the other half lives a great deal better than it is ever likely to learn from selected exhibitions of morbid social excrescences displayed on a screen by professional reformers or realistic novelists.

Essen does not represent the most common type of industrial community; it is too much of a one-man town and bears too many marks of the paternal employer's hand. But as an industrial achievement it is all the more remarkable. In 1811, when the first smelting furnace for casting steel was set up by Peter Friedrich Krupp, the population of Essen was under 4,000. In 1901 it was 183,500, out of which the Krupp contingent numbered about 84,000. At the same date there were more workmen's dwellings built by the firm than there had been inhabitants when it was founded. Now this and a great deal more is essentially the work of one man, and it is unparalleled in the history of industry. It must not be supposed, however, that the Krupp family created Essen out of the wilderness, as some places have been created by industrial enterprise, nor did they — to put the matter in another familiar way—turn a sweet rural scene into a wilderness of bricks and chimneys. The place is ancient, and has a history.

In the Middle Ages it was a walled city; the shape of the central quarter, the narrow and winding streets, and

the names of the four gates survive as reminders of the past, but no other vestiges remain. It was for many centuries the seat of a princely religious foundation, dating from the ninth century. The town no doubt grew up as a dependency around the cloister, which had Royal and Imperial connections; and both were ruled by a long series of abbesses of exalted rank, whose office from an early period carried with it the secular power and the title of Fürstin, or reigning Princess. The last Princess Abbess of Essen died in 1826, but she had been turned out five-and-twenty years before, on the conclusion of the peace of Lunéville, by which a number of church manors fell to Prussia. There is evidence that at some time during this early period of the town's history the inhabitants carried on a considerable textile industry. The names Flax Market, Weaver Place and Weaver Street, which survive, attest its existence. For centuries also Essen was famous for the manufacture of firearms. The command of running water and of coal, which is mentioned in connection with Essen as early as 1317, accounts for the development of these industries. They appear, however, to have declined gradually during the eighteenth century, when the town fell into a decayed condition. Modern Essen may be said to date from the evacuation of the French in 1813, which almost coincides with the original foundation of the Krupp works and marks the beginning of a new era. At that time the city walls were still standing, and a truly dismal little place they enclosed. To quote Justus Gruner:—

"All the decencies of life must here be renounced. Dirtier inns and ruder hosts are not to be met with in all Germany. Crooked, ill-paved lanes, old-fashioned, dilapidated houses, filth, crowding and darkness attest the antiquity of the place. On account of the entire absence of street lighting it is dangerous to take a walk in the evening, because one cannot help running up against great stakes, which commonly stand right in the middle and at the sides of the roadway. There is no police of any kind."

From this unpromising germ modern Essen has been gradually evolved, and at first the process was slow. It was not until 1830 that the middens and pig-styes which adorned the streets were cleared away.

Here is an object lesson worth pondering on for a moment, especially by those who declaim against the "factory system," against capital, individual enterprise and ownership. These things, they tell us, are hostile to "progress". Yet it cannot be denied that a good many signs of what is called progress in their own vocabulary have accompanied the evolution of Essen from the squalid slum it was in the lamented ante-factory age, when the workman owned his own tools, to the iron city of to-day, with its good workmen's houses, its public schools, parks, libraries, baths, hospitals, co-operative stores, recreations, and what not. Nor can it be denied that the Krupp factory has had a large share in the evolution. Still less can it be denied that this factory with all its works is an example of individual enterprise and ownership. The story bears repeating.

Peter Friedrich Krupp must have been a sanguine and energetic young man. He was born in 1787 and went as a youth into some ironworks at Sterkrade which came into the possession of his grandmother in 1800. These works had been started in 1780 and were among the earliest in the district; they still give their name to the large iron and steel business known as the Gutehoffnungshütte of Oberhausen. Here young Krupp worked at the invention of a process for casting steel and committed the reprehensible imprudence of marrying at twenty-one. One hears a good deal in these days about prudence, but in those a young man with some stuff in him followed the dictates of nature and took his future in his hand. Friedrich did so and carried off his bride to Essen, where some ironworks that had been built for the abbess in 1790 were at this time acquired by the firm, which also became the owners of the Sterkrade works. This connection may have been the reason of Krupp's settling in Essen, but at any rate he soon set up for himself, and at the age of twenty-three he purchased a small forge worked by water power, where he devoted his time to secret experiments in producing steel in small crucibles. To this day the casting of crucible steel is the great speciality of the Essen works. A son, Alfred, was born to the young couple in 1812, when Friedrich Krupp was twenty-five. Want of means compelled him to enter

into partnership at this time, and in 1815 the firm announced that they were prepared to accept orders for cast steel; but as no orders came the partnership was dissolved, and he was left to struggle on alone. This he did for some years, but with difficulty, until in 1826 he fell ill and died, leaving a widow and four children. Alfred, the eldest son, was then fourteen, and on his shoulders fell the burden of carrying on the business. His father had entrusted the secret to him and taught him the trade—another reprehensible proceeding according to modern views, which regard it as a crime for a child to enter a workshop or learn anything but school lessons before the age of fourteen. Alfred left school at once and took his place in the shop, where he worked at the furnace and the forge harder than his own handful of journeymen, and for years made no more than sufficed to pay their modest wages. "For my own toil and pains at such an early age," he said afterwards, "I had no reward but the consciousness of doing my duty." Few schoolboys have entered on the struggle for life with such a laborious inheritance and fewer have emerged so victorious after so long a probation. For twenty-five years the fate of the concern hung in the balance and success became assured only after the London Exhibition of 1851. Four years previously the first gun, a three-pounder, of cast steel had been finished. Thenceforward the story is one of rapid and almost continual progress. In 1853 the manufacture of weldless steel tires was begun; ten years later the first workmen's colony was built, and not long after Mr. Krupp found himself in a position to obtain command of raw materials—and so place the business in a self-sufficing and impregnable position—by the purchase of iron mines and blast furnaces, presently followed by coal mines. He died in 1887, having been for sixty years the head and for forty years the sole proprietor of the works, which then passed to his only son, the late Mr. Friedrich Alfred Krupp. They have been greatly extended since by the addition of other works and mines, and, in 1902, the Germania Shipbuilding Yard at Kiel, but are still, with all their branches and appendages, the sole property of the family. They are managed by a board of directors. On 1st April, 1902, the total number of persons employed at the various works was

43,083, representing with their families a population of about 150,000. The numbers were thus distributed :—

Steel works at Essen	24,536
Gruson works at Buckau	2,773
Shipbuilding yard at Kiel	3,987
Coal mines	6,159
Blast furnaces, proving ground, etc.	5,628
Total	43,083

I do not think any apology is needed for spending a little time on this well-known story. In some details it is unique, but in broad outlines it is typical. The old-fashioned little house of five rooms, in which Alfred Krupp's parents lived and worked and brought up their children, hard by the original forge, still stands at the entrance to the works, and a tablet on the door refers, modestly enough, to the privations, efforts and anxieties which attended the founding of the business and overshadowed its career for many years. The contrast between the small, struggling beginning and the immense eventual achievement stands embodied before one's eyes with a dramatic significance which cannot fail to impress; but if one inquires the origin of other manufacturing concerns, one finds that, with rare exceptions—and those of recent date—they were started in much the same manner, went through similar early struggles, and survived by virtue of the same qualities. The "factory system," I repeat, is not the creation of capital, but of the superior intelligence, industry and endurance of individual workmen, and it has been a great school for the exercise and development of those qualities. The denunciation of the "system" and all similar cries are at bottom demands that the naturally superior shall not be allowed to exercise the qualities implanted in him by nature, but shall be artificially reduced to the level of the inferior. That is, no doubt, the direction in which social change is moving. We level up, and, at the same time, we level down; but there is something to be said for such as the Krupps.

Not all successful manufacturers, however, have used their success in such a responsible fashion as Alfred Krupp and his successor. There are other model settlements in

Germany and elsewhere. England invented them and can show as good specimens to-day as any other country. But there is none on so large a scale, or, perhaps, so complete as Krupp's. It was in many respects a pioneer, and has long served as a model. Consequently, it is the object of bitter resentment on the part of those theorists who maintain the right of the workman to the whole produce of labour. They denounce all such benevolent works as a fraudulent imposition on the recipient. Their theory is out of date and their personal attacks are base, but in part they are right. The reign of the benevolent employer is over. He gets no thanks, and the tendency is all in the direction of securing such conditions of employment as will enable the employed to provide their own benevolent institutions. This will not, of course, satisfy the extremists, who want to have no employers or employed, but to merge both into the community. In fact, it is a blow to them and another nail in the coffin of orthodox social democracy, for it will tend to make the employed more content. More philosophical observers will regard it with equanimity as the next turn in the ever-moving social current, whose ceaseless change represents the fresh readjustment of men to ever-changing conditions and invariably confounds the theorists by taking an unexpected bend. At the same time they will pay a tribute of appreciation to those who have done good work in their day. Among them Alfred Krupp stands out as a man of mark. Only blind hatred can refuse to see in the institutions started by him, and continued by his son, for the welfare of their men, a high sense of responsibility and a genuine fellow-feeling. Their value may be a matter of opinion; it depends on the object. But if material well-being be the measure of success—and in these days none other is recognised—the proofs of it are abundant.

The statues and portraits of Alfred Krupp, which commemorate him at Essen, give a very clear idea of what manner of man he was. Of the same generation as Kaiser Wilhelm I. and Von Moltke, he was of the same mould—tall, upright and spare; an alert, strenuous man, with the head of an inventor, a penetrating yet kindly eye and an air of command; a thinker, yet living amid realities and

a master of them; an unmistakable leader of men. Add Bismarck and you get a stately quartet indeed. It may be mere accident, but I look in vain for men of this physical type in Germany to-day. They seem to belong to another and more heroic age.

The English town which most naturally suggests itself for comparison with Essen is Sheffield, and there are many points of resemblance between them. Both lie on the same hilly sort of ground that goes with the presence of coal; both have narrow, old-fashioned, irregular streets; both have charming country on their outskirts, though in this the advantage lies with Sheffield; and both manufacture the same things on the same scale. On the other hand, Sheffield is more than twice as big, it is a much older manufacturing place and has a greater variety of manufactures. The ancient cutlery industry, file-cutting and electro-plating give it a special character which is lacking to Essen. Take them as they stand, however, for what the comparison may be worth, and it must be admitted that the German has rather the best of it. The site of the Krupp works on the lower side of Essen, in and yet out of the town, is curiously like that of the great Sheffield works—Cammell's, Brown's, Firth's and Vickers Maxim's—which lie all together in a similar position and probably occupy even more ground between them. They certainly make more smoke, or it hangs more persistently about. I have already said that Sheffield is the grimiest of all our manufacturing towns, with the possible exception of Gateshead, and a large part of it is generally wrapt in a pall which neither London nor Manchester can equal. America alone, with her genius for surpassing everything, easily beats it. Compared with the inferno of Pittsburg and the lesser, but still more grimy and dismal, hells up the Monongahela Valley—Homstead, Braddock, and the rest—Sheffield is clean and Essen a pleasure resort, in spite of the fifty or sixty tall Krupp chimneys that flank it on one side and various other factories with sundry coal pits on the other.

From the high ground to the south one gets a good birds-eye view of the whole, and it is worth a look. The largest private workshop in the world lies below on the left, a self-contained unit in a ring fence, spread out over a great area

on the flat ground; for Krupps have not been cramped for space and there is no huddling. The smoke drifts away northward for miles, but leaves everything clear behind it. To the right lies the town with its spires and public buildings and a spacious park in the foreground. Around one are the Krupp colonies. These begin close to the works on the side away from the town and spread up the hills to the south and south-west, lying dotted about over a wide area and forming a number of separate villages. As an essential part of Essen they deserve some notice. There are eight of them, built at different times and in different styles. The oldest dates from 1863 and lies just outside the factory gates. It consists of a few rows of ordinary houses arranged in streets and occupied as flats of two and three rooms each. The next were built in order to accommodate the great increase in the number of hands caused by the rapid expansion of the business after the Franco-German War. Apart from some temporary buildings run up in a hurry and since demolished, they consist of an extension of the first colony and three new ones, laid out as separate and self-contained villages with a more or less rural character. The houses are grouped about central open spaces; most of them have gardens and some have cowstalls. Schools, stores, market-places, recreation grounds, and other public institutions, including the indispensable *bier-halle*, make the village complete. But there are no fancy appointments about these colonies. Everything is quite plain and practical. The houses are not single cottages; they contain from four to twelve families, each occupying from two to four rooms. The object was to provide cheap and decent housing, which was not otherwise obtainable, and it is kept strictly in view. The three remaining colonies were built many years later by Friedrich Alfred Krupp. They lie further out in the country and are of a more ornamental character. In one—the most recent of all—the flat system is retained, but is carried out in a more artistic fashion. The other two consist of cottages in the English style and are quite charming, particularly the Altenhof colony for disabled, aged and pensioned workmen. It lies high up on the hill at some distance from Essen, and includes two churches—Roman Catholic and Protestant—and a delightfully-situated con-

valescent home. Here the old pensioners pass their remaining years in the greatest comfort, pottering in and out of each other's houses and discussing the newspaper or gossiping. The total number of dwellings erected at the end of 1901 was 4,274, thus classified: Two rooms, 1,690; three rooms, 1,869; four rooms, 448; five rooms, 150; six rooms, 63; seven or more, 54. They housed 26,678 persons. Rents range from 7d. to 1s. 6½d. a week per room. Thus the rent for one of the best four-roomed dwellings is about 6s. 2d. a week. The capital expenditure on workmen's houses by the firm amounted at the same date to £814,000. Other subsidiary institutions include a general hospital, two infectious hospitals, medicinal baths, circulating library, dining-rooms, club-houses, schools, stores, savings banks, life insurance and numerous sick and pension funds. The effect of the Krupp colonies in meeting the housing difficulty is seen in the fact that the average weekly rent of a single room in Essen is only 1s. 8d. (1901), against 2s. to 2s. 6d. in neighbouring towns of a similar character.

With regard to Essen proper not much more need be said from the industrial point of view. There is nothing very remarkable about the town. The main streets in the centre have been modernised, but they remain narrow and rather mean. Some of the side streets retain the old character and an element of picturesqueness. The churches, schools and numerous public buildings substantially modify the congestion, which must once have been great. The newer streets in the outlying parts of the town are well laid out and adequate. As is usual in German towns, the public buildings are handsome, solid and built to last, and they are rather more numerous than usual in Essen, which is a somewhat important centre. It is the seat of the provincial Courts of Justice and the district headquarters of the Prussian State Railways. Both are worthily housed. The town hall is new and sufficiently important.

Apart from Krupp's the industries are not extensive. There is one considerable ironworks which makes a speciality of boilers, a chemical factory, breweries and several coal pits. The town lies over the coal-bed and the mines run underneath it. The great Rhine-Westphalian Coal Syndicate—probably the most important industrial combination

in Germany—has its headquarters at Essen. The products of the Krupp works are very varied. Their fame is chiefly associated with war material but they minister no less to innumerable peaceful purposes. All kinds of finished and half-finished material for railways, ships, engines, tools, mills and other industrial appliances are turned out in large and small quantities. The war department includes guns of all sorts, of which 39,876 had been delivered up to the end of 1901, projectiles, fuses and ammunition, rifle barrels and armour. The manufacture of offensive and defensive material is a lucrative game of see-saw in which the Governments of the world are pawns in the manufacturers' hands. It is like the burglar and the safe. The scientific possibilities are infinite, and the experts have only to turn their attention to each in turn and their customers must follow. A more powerful gun, a more vicious projectile or a new ammunition and the old defences are obsolete. The Governments hasten to provide themselves with the latest instruments of destruction. Then the metallurgical chemist brings a new hardening process or a new alloy on the scene and produces armour which defies the latest weapons; and again everybody must have it or questions are asked in Parliament. Thus it happens that the Essener Hof—that most exclusive of hotels which stands hard by the works and is reserved for distinguished customers—never lacks guests from all parts of the world. They are the emissaries of their Governments, watching the execution of orders. There is not much fear that any of the great Powers will outstrip the rest to an alarming extent. These matters are, of course, a profound trade secret; but somehow or other Essen knows pretty well what is going on at Elswick and Sheffield, which return the compliment, and all three have made up their minds about the merits and defects of the new French gun before it has been delivered. At present, I understand, armour plate is made in England and America on the Krupp process by arrangement with that firm.

This suggests a comparison as regards the workshops. Elswick is the single establishment which comes nearest to Essen in size and character, but the conditions are so different that comparison is hardly valid. The famous Armstrong works lie stretched out in a narrow belt along

the left bank of the Tyne and are rather cramped for room. In some departments the shops are built in several stories and cannot therefore be lighted from the roof; but the recently reconstructed foundry, measuring 770 feet by 75 feet, is a fine specimen of its class. The Krupp shops have been built at very different dates and vary accordingly, but as a whole they possess in a marked degree that order and cleanliness which is the most distinguishing feature of German factories. This extends to the foundries, where dirt, smoke and confusion usually hold sway. A speciality here is the casting of very large ingots of crucible steel; it is a remarkable sight and an object lesson in German methods. Ingots of eighty-five tons are cast, a feat which is, I believe, not attempted anywhere else. The steel is melted in small crucibles which are carried by hand, and therefore contain no more than two men can lift. Scores of such crucibles go to the making of an ingot of considerable size, and they occupy many furnaces, which are ranged on both sides of the foundry, with the ingot-mould in the middle. At the signal the furnaces are opened, the crucibles drawn out and seized by a small army of workmen, who run them down to the mould and pour them in. It is obvious that to do the thing on a large scale perfect method in preparation and order in execution are necessary. The manœuvre is carried out with military precision and promptness. In a moment the place is aglow with the white heat of the furnace, the figures run from all sides, and come staggering down in pairs with the pots full of liquid steel. It is a scene of intense activity, but without confusion. One after another the glowing pots are emptied; the molten metal runs like thick soup and plumps into the mould with a bright sputter. In a few minutes it is all over; the furnaces close again, the used crucibles are thrown aside, and already the cast mass begins to congeal and change colour; white presently dulls to yellow, and the tint deepens as you watch. The steel so made is the purest known, close-grained, homogeneous and uniform throughout. The most recently built workshops at Krupp's are quite up to date in their construction—light, spacious and airy; but they are in no wise superior to the newer ones at Sheffield, which are also fully as well equipped with modern appliances.

I mentioned the churches and schools above. Nothing is more striking in this part of Germany than the number of fine churches built or restored in recent years. The total provision of places of worship is small compared with that in English and American towns, where innumerable sects have their own conventicles; but the concentration of religious influences into two camps—Catholic and Protestant—results in the erection of much finer buildings. They really are churches, not mere barns or concert-rooms, and embody some true sense of religious aspiration. Essen has at least five such modern churches—three Catholic and two Evangelical. The relative strength of the two main communions is, roughly: Catholic, 101,000; Evangelicals, 76,000; with about 1,800 Jews and a few Dissenters. The elementary schools are accordingly divided thus: Catholic, twenty-four; Evangelical, seventeen; one old Catholic and one Jewish. The other public schools are a continuation and a trade school with three sections for (1) building, (2) engineering, (3) decoration; *Gymnasium*, *Real-Gymnasium*, *Ober-Realschule*, and higher girls' school. The trade school answers to what is called in England a technical school. It has day classes for superior students, who pay 30s. the half-year, and must have previous practical knowledge, and evening and Sunday classes for artisans, who pay 16s. a year. The rapid development of the labour market has caused a great influx of workmen from other parts of Germany and from elsewhere, but this is a common feature in the Rhineland manufacturing towns to-day. Like Düsseldorf, Essen returns a Central member to the Reichstag In the general election of 1903 the final majority over the Social Democratic candidate was 6,384.

Municipal enterprise is less developed in Essen than in Düsseldorf. The electric trams belong to one company and the electric light and power are leased to another. The public water supply is very fair, but it entails such a heavy draught on the river Ruhr that large reservoirs made by damming flood waters among the hills are contemplated. This is a common source of water supply in the Berg country, and will be further mentioned in connection with Solingen. Essen is sewered and drained. The sewage is

chemically treated, but there is the usual difficulty in getting rid of the solid residue.

Vital Statistics of Essen, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
187,385	46·1	20·7	25·4	165

The very high birth-rate, only equalled by Duisburg, and a low suicide rate (·08 per 1,000, the lowest in the large towns of Germany), indicate a high degree of prosperity. Of the births only 3 per cent. were illegitimate; this is also very low, and only equalled by four towns.

Miscellaneous Statistics.

Police Force.	Public-houses.	Churches.	Theatres.	Newspapers.	Free Library.
225	416	13	3	22	1 (Krupp's)

Elberfeld and Barmen.

Here we have the true type of industrial community. These sister towns—administratively separate, but actually one, like Manchester and Salford or Hamburg and Altona—are purely manufacturing places; they have been so for centuries, and as towns have never been anything else. They may fairly be compared with Bolton and Blackburn as to size and character, though there are important differences. Their manufactures are far more varied; they are not cotton centres, and they contain more of the trading element than the Lancashire towns, where the warehouse business, as I have shown in the last chapter, is relegated to Manchester. In these respects they more nearly resemble Bradford and Halifax.

Elberfeld and Barmen are situated on the edge of the charming and romantic Berg country, which lies a few miles east of Düsseldorf and north-east of Cologne. They form a continuous narrow winding belt of houses and factories about eight miles long, hemmed into the small and rather deep valley of the river Wupper, a hill tributary of the Rhine. They are famous for their textile and chemical manufactures, their unique hanging railway, and for the poor-law system inaugurated at Elberfeld and copied all

over Germany. They are, or should be, infamous for their treatment of the beautiful little river to which they owe the origin and development of their industrial prosperity. Centuries back this valley acquired a reputation for the bleaching of linen, and in 1527 the Herzog of Berg granted the inhabitants the monopoly of producing the yarn, to which they presently added the art of weaving. Their goods became known far and wide; they did a large export trade and waxed fat. In 1610 Elberfeld received a charter of incorporation, so that it has been a self-governing city for nearly 300 years. Barmen can hardly have been less prosperous, for at this time it possessed eighty-eight bleacheries; but it had to wait 200 years for the same privilege. Both underwent the usual chastening discipline of war, fire and pestilence. Like all the other towns in this part of the world, they were from time to time occupied by various troops, and occasionally plundered, burnt down and devastated; but the sturdy race quickly recovered itself and drew profit from adversity, as all men of stamina do. When French troops were quartered on them they improved the occasion to establish business connections and extend their markets and their manufactures. Trade with France, promoted by Colbert, became important. Early in the eighteenth century the art of dyeing was introduced, and the use of wool, followed by silk and cotton, with lace and ribbon making, was added to the previous textile industries. Jacquard looms were introduced in 1821. Various allied manufactures, such as buttons and thimbles, began to be developed; and, in spite of two large speculative failures —the Rhine West Indian Company (1821) and the German American Mining Society (1824)—the numerous industries, except spinning, grew steadily during the nineteenth century. The Wupper towns took their full share in the national development following the war of 1870. At the time of the French evacuation, after the fall of Napoleon Bonaparte, they had a combined population of some 30,000; in 1900 it had grown to 300,000, of which Elberfeld accounted for 156,000 and Barmen for 144,000. By the extension of the factories along the river banks the two towns have grown into one, and as they stand they may be said to constitute the greatest centre for the production of

drapery and haberdashery in the world. To that must be added a speciality which more than any other represents the triumph of Germany. I mean the manufacture of dyes and fine chemicals. Germany has made herself purveyor to the world of these products, and the Wupper Valley is one of the principal seats of the industry.

In its essential features this busy community more closely approximates to the English type of manufacturing town than any other in Germany. There is the same throb and pulse of life, the same impression of energy, the same absorption in realities and sane acceptance of a work-a-day world, coupled with a determination to get as much enjoyment as can be got out of it. And there are the same unattractive accompaniments, of which more presently. We can leave the unpleasant things to the last, and begin with the others.

The hanging railway is the most striking thing the two towns have to show. If sightseers visit them at all, it is generally to see this famous contrivance, which is the first of its kind to be adapted to passenger traffic. It runs from Vohwinkel, a suburb at the lower end of Elberfeld, up the valley nearly to the far end of Barmen, which lies higher up the river. In other words it traverses the entire length of Elberfeld-Barmen from end to end, and for nearly the whole distance it follows the river. It is, in fact, built over the river, and, but for that convenient artery, which provides just the required space all the way through the heart of the place, it could hardly have been built at all. That is clear from the course of the railway, which also traverses the valley, but has to keep to one side; and of the trams, which have to make numerous detours, and are consequently very slow. The river happens to be wide enough, but not too wide, for the purpose, and it is exactly in the right place, for the houses and factories—particularly the factories—line both banks from end to end. The railway is suspended in the following manner: About every hundred feet iron lattice work supports are planted on each bank, inclining towards each other at an angle. They are joined at the top by a girder, forming an arch over the river. There is thus a

series of arches about 100 feet apart. An iron framework, light but strong, runs from one to another and so forms a continuous line, running lengthways above the stream. This structure carries a rail on its outer edge at each side, and the cars are suspended from the rails, the "up" cars on one side and the "down" cars on the other. Each car hangs from the rail on four wheels, arranged in pairs, one pair at each end, and held above the roof by powerful arms attached to the body of the car. In appearance it is very much like those on the Great Wheel at Earl's Court. Thus suspended over the river and driven by electric motors placed between each pair of wheels, the cars run along the single rail at great speed, and with an extremely easy motion. At first some difficulty was experienced from a tendency to sway and rock, which even caused sea-sickness in very susceptible passengers, but that has now been overcome and reduced to an occasional and barely perceptible movement. There are stations at short intervals, and the speed and freedom from obstructions make the railway an extraordinarily convenient means of locomotion. In a few minutes it lands you in any part of the town you wish. I know the overhead railways of New York, Liverpool and Berlin, the London tubes, and the shallow underground railways of London (alas! too well), of Boston and Budapest; but in my opinion the hanging railway of Elberfeld-Barmen is more expeditious and agreeable than any of them. I doubt if it would be suitable to the narrow streets of inner London, though at Elberfeld the end section to Vohwinkel leaves the river and is carried over the main street, but the system deserves more attention that it appears to have received in England from those who are interested in problems of locomotion. Germany is quite as good a school for these things as America. Mr. F. N. Gütersloh, a retired engineer who for many years held an important post under the Indian Government and now lives at Düsseldorf, considers the hanging railway admirably suited to a line from Calcutta to Simla. The first portion of the Elberfeld line was opened in March, 1901, the last at the end of June, 1903. The total length is eight and a quarter miles. The cars hold fifty passengers each, and they

run at intervals of a few minutes, either singly or two or more together, according to the requirements of the traffic. The fares vary from ten pfennigs (a trifle over 1d.) to fifty pfennigs (6d.) according to class and distance. The line was built for the "Kontinentale Gesellschaft für Elektrische Unternehmungen Nürnberg," by the "Maschinenbau-Aktiengesellschaft Nürnberg". It is standing evidence of German enterprise in electrical engineering. I understand that similar lines are to be built in Berlin and Hamburg.

It is hardly necessary to say that Elberfeld and Barmen are determined rivals. To say anything in praise of one within the hearing of a citizen of the other is like speaking of Bolton to an Oldham man, or mentioning Bradford in the streets of Leeds. Your hearer promptly calls attention to the superior merits of his own place of residence. This rivalry is a healthy and stimulating influence; it keeps a vigorous public spirit going. There are many signs of it on the Wupper. The towns—or at least the central parts of them—are old and unsuited to the great traffic of to-day; they are crowded with factories; their situation is unusually cramped, making extension difficult; and the population has increased very rapidly in recent years, largely by the influx of workmen from outside. In these circumstances great efforts are required merely to prevent extreme congestion and squalor, and they have been made. Any one familiar with such matters must readily recognise how much has been done both by public and private action, not only to mitigate actual evils, but to increase the dignity and amenity of life. The heart of Elberfeld, in particular, is a labyrinth of queer little crooked streets, in which the keenest sense of direction is apt to be at fault; but they have made room for a magnificent town hall, occupying a commanding and central position, and have driven a new street through the crowded buildings hard by. The Town Hall cost £185,000 and the new street £450,000. Similar improvements are being carried out elsewhere, particularly on the river bank, where they are very badly needed. In short, Elberfeld is on the road to be quite a fine town. It would be gross flattery to say that it is so already, in spite of the things mentioned and the open space in front of the

chief railway station, which makes a favourable first impression, flanked as it is by the municipal theatre and baths on one side and the State railway offices on the other. Many things remain to be done before Elberfeld is entitled to a first-class certificate, and I shall take the liberty of mentioning some of them before I have finished. Barmen seems to be somewhat less ambitious, but it has some more open streets and a more pleasing air; it is more spread out, less shut in by the hills and, so far as buildings are concerned, it deserves special credit for the really dignified *Ruhmeshalle* or Hall of Fame, erected by the citizens to commemorate the Franco-German War. The hall houses, among other things, the town library, and is an agreeable change from the interminable Bismarck and other "denkmals," which are strewn about Germany like the statues of her late gracious Majesty in our own happy land, and with about the same sense of art. The Barmen *Ruhmeshalle* redounds doubly to the fame of the town, for the architect was the Director of the Barmen Technical School for Architecture, and won the first prize in an open competition.

The educational facilities are exceptionally complete; for, in addition to the full complement of elementary and higher schools, there are "technical" schools for textiles, for architecture and for engineering, as well as art-trade and hand-worker schools. Of the technical schools, the most important is, naturally, that which provides instruction in the predominant local industries, which are various kinds of textiles. It is situated in Barmen. Though not so large as some of the newer ones and with a less ambitious equipment, the building is adequate, the teaching staff numbers seventeen, and the installation includes about 100 machines. The curriculum is particularly directed to the Wupper Valley specialities. Practical instruction is given in weaving dress and upholstery materials, braids and ribbons, in knitting, lace-making, art-sewing, designing, dyeing and finishing. There are day and night classes, the former for manufacturers, managers and heads of departments, the latter for foremen and forewomen and for ordinary hands, both male and female. The various grades of students are taught in separate departments. The full course varies from half a year for work-people to four years for de-

signers, and the fees from 30s. for work-people to £10 for manufacturers, managers, buyers and salesmen, dyeing and finishing experts. That is for Germans. The fee for foreigners is £50. The same rule applies to all the Prussian schools of this class, which are under the control of the Ministry of Commerce. Elberfeld has quite recently started a school of commerce and compulsory continuation schools.

The housing of the working classes in this thronged and crowded valley is far from satisfactory, and less appears to have been done towards providing better accommodation than in several other industrial towns in the district, although Barmen was one of the first to start a building company for the purpose more than thirty years ago. Down to the end of 1901 the company, which is of the nature of a benefit society, had built 365 houses in ten different quarters of the town, housing some 2,500 persons, the majority of whom were factory workers and their families. Some of these houses have a very pleasant appearance; they are certainly better and cheaper than the ordinary dwellings obtainable, but even in them there is much overcrowding. An official report published in 1897 gave the proportion of tenants living more than two in a room as 16 per cent. In neither town has the municipality provided any housing, but Elberfeld keeps a house register for the benefit of the working-classes. The impression derived from observation is not favourable. Tenement buildings of many stories abound, and in the more congested districts rise up one behind the other on the hillside. Some interesting statistics, based on the census of 1900, have been prepared by Dr. Otto Landsberg, Director of the Statistical Office of Elberfeld. In the most congested part of the town 62·9 per cent. of the inhabited buildings contained over six households each; 68·4 per cent. contained upwards of twenty inhabitants; and 12·1 per cent. upwards of fifty inhabitants. The density of population here was 190 to the acre. I have no corresponding figures for Barmen, but the overcrowding there is less obvious, and the average number of persons to a dwelling-house is slightly lower. Manufacturers appear to have done less to provide housing for their people than in many other places, but credit should be given where it is due. The

great chemical company, "Farben Fabriken," have built fifty superior houses containing 200 families, and the well-known firm of D. Peters & Co. have a remarkably complete model settlement at Neviges, an outlying manufacturing village. The average weekly rent for an unfurnished room is 2s. 4d. in Barmen and much the same in Elberfeld.

In spite of the overcrowding, these towns are remarkably healthy. The death-rates in 1901 were: Elberfeld, 17·2, Barmen 16·5 per 1,000. Such rates are so remarkable for towns of this size and class that I am somewhat at a loss to account for them. One factor may be the presence of a large number of single immigrant working men in the prime of life; if crude rates were corrected by the age co-efficient, they would probably be higher. Another reason is a comparatively low infantile death-rate, which is surprising in a place where the birth-rate is high and many women are employed in factories. However, the valley is undoubtedly healthy, and probably the chief factor is the situation of the houses, which are built on natural and often steep slopes. Everything is carried off rapidly, and the ground does not become wet or saturated with filth.

Both towns have several good parks and playgrounds, thanks chiefly to their Verschonerungsvereine, or improvement societies, which appear to be very active and public-spirited bodies. They have preserved portions of the charming wooded scenery which once filled the valley and still lies on the outskirts beyond the range of bricks and mortar. No town of this kind has prettier surroundings. The place must once have been lovely.

The churches are less noteworthy than in many neighbouring places. I do not know if this is due to the preponderance of the Evangelical element, which includes about four-fifths of the population. The disparity was formerly still greater, but in the last ten years there has been a more rapid relative increase of Catholics in Elberfeld, doubtless by immigration. The following details with regard to religious sects, from the census of 1900, may be of interest as showing the state of this element in a German Protestant town. They are classified thus: (1) Evangelical, 113,008; (2) Evangelical sects, 593; (3) Catholic, 40,122; (4) other Christians, 1,473; (5) Jews, 1,679; (6) others, 88. (1) The

Evangelicals are further divided into thirteen sub-divisions, of which the important ones are: Evangelical-Lutherans (52,166), and Evangelical Reformed (43,357). There are 15,686 unspecified, and the remainder consist of insignificant groups, or solitary individuals, such as one "Zwinglian" and one "Waldenser". (2) The "Evangelical sects" are seven in number. They include 283 Baptists, twenty-one Anglicans, twenty-one Methodists, eleven Mennonites and one "Herrnhuter". (3) Of the Catholics, 40,000 belong to the Church of Rome, ten to the Greek Church and forty-two are "Altkatholisch". (4) The "other Christians" include two members of the Salvation Army, twenty-seven Adventists, thirty Darbysts, one representative of the *Versammlung Gottes*, forty-three Free Religionists, besides "Dissidents," "Christian Dissidents" and plain "Christians". (5) The last class includes one "Heathen," two "Freethinkers," twenty-two Atheists and forty "religionless". This curious collection goes to show that the spirit of the "Marrow Kirk" is not unknown in Protestant Germany. Of the thirty-six varieties and sub-varieties of conscience enumerated (of course by the people themselves), six are represented by solitary individuals. In spite of the Social Democratic doctrines, which have a strong hold here and are still hostile to Christianity, though a profession of indifference has been found politic, the people have the character of being very God-fearing and religious; and that is borne out by the exceptionally low number of illegitimate births. The proportions are (1901): Elberfeld, 5·8; Barmen, 3·0 per cent. of the total births; and Elberfeld, 2·1; Barmen, 1·0 per 1,000 of the population. In Chemnitz, which more nearly resembles Elberfeld-Barmen than any other industrial town in Germany, the respective rates are 12·1 and 4·8; but the difference is partly due to higher wages and superior prosperity in the Wupper Valley. The Elberfeld poor-law system will be more fully explained under the heading of "Pauperism," but it deserves mention here in connection with the town which invented it. The claim is, I believe, disputed by Hamburg or some other place, as such claims generally are; but Elberfeld certainly was the first to apply and develop the idea, and deservedly enjoys the credit of it. Broadly speaking, it is an elaborate system of

outdoor relief, organised in great detail and carried out not by paid officers, but by private citizens who give their services gratuitously. Such services are compulsory in any place where the system has been adopted, but its adoption is voluntary. In other words, the citizens voluntarily assume a burden which entails upon any individual selected real and personal sacrifice of time and trouble of quite a different kind from that devolving on boards of guardians or other representative bodies. It is a striking example of that public spirit and sense of duty which are so marked a feature of German civic life.

Some idea of the number and variety of the industries carried on has already been given. I can hardly think of any town, except Philadelphia, where there is so much variety; and this is an important factor in the maintenance of steady employment. Towns which have all their eggs in one basket, so to speak, like Crefeld, Bradford, Oldham, Fall River, and many others, are hit very hard when a depression occurs in their speciality: there is nothing else to fall back upon. But with plenty of variety this does not happen; as, when one branch is depressed, another is often unusually brisk, money is kept circulating, and persons thrown out of work in one direction have a chance of temporary employment in another. Almost the only large branch of manufacture which does not find a place is spinning, which is fortunate for Yorkshire and Lancashire. The Wupper is one of their best foreign markets. All kinds of dress materials—wool, silk, cotton and mixed; dress accessories, particularly braids, trimmings, ribbons, embroidery, laces and buttons; carpets, curtains, and other furniture stuffs; dyes and chemicals—these are the staples. But there are also rubber and leather goods, gold, silver, copper and aluminium wares, textile machinery, paper, soap, oilcloth, wall-papers, stained-glass, and many others. The factories, as a rule, are small and consequently very numerous. Many are also old. There are some fine new mills at the far end of Barmen, but modern buildings are the exception. The factories are placed all along the river on both banks, with their backs to it, and all their refuse runs into the stream. The view, once hidden, but now revealed by the hanging railway,

which runs between them, is absolutely horrible. The mills are not so bad, but the dye and chemical works are most offensive. The development of these industries dates from 1785, when the secret of turkey red was acquired, the discovery of aniline colours gave it a great impetus, and the subsequent immense expansion of industrial chemistry in Germany has nowhere been more actively applied. In particular Elberfeld has the honour of housing the renowned "Farben Fabriken" Company, at whose enormous works 160 expert chemists are said to be employed. Among other blessings showered upon the world by their labours, are constant additions to the interminable series of synthetic and other new drugs, including those anodynes and sedatives which are largely responsible for the increasing prevalence of "neurasthenia" and inebriety among women of the upper classes.

Now these works are doubtless good for trade, but they have their seamy side, and it does not need much looking for. The Wupper has already suffered some indignities before it enters Barmen, but so great is the volume of pure water brought down from the hills by the rapid little stream that it is still quite clear. The tint darkens steadily as it passes mill after mill, and by the time it reaches Elberfeld it is fairly black; but the filth continues to be poured in. Every factory adds its shameless contribution—red, blue, yellow, purple—varied by drains carrying the surface water from the town, mingled with the household slops that meander freely down the gutters in the side streets. The stream emerges opaque, slimy, black as ink, with a foul iridescent scum; and in that condition it wanders away down the lovely wooded valleys by Müngsten and Burg, which it pollutes with its disgusting presence. It is half solid with filth, and its banks are covered with a deposit of black and stinking slime. We cannot boast on the subject in England, but even the unfortunate river Aire, after running the gantlet of Shipley, Bradford, Leeds, and other towns, is nothing like the Wupper. It is the most damnably ill-used running water in the world. It should be a thing of beauty and delight; it is a black disgrace and a public nuisance. Presumably this iniquity is permitted to continue unchecked

because those who perpetrate it control the conduct of public affairs; but if the chemical works, instead of boasting of the number of chemists they employ and the millions of capital they have invested, would apply the knowledge of the one and some small portion of the other to disposing of their refuse and abating the nuisance, they might command more respect than it is possible to pay them at present.

There is some hope of it, perhaps; for as I have said, the place is improving. Indeed, there are signs of it even in the river. Evidently innumerable drains used to empty into it which now do not. The sewage is, I believe, carried down below, which is better than running it through the town. Drainage and the disposal of sewage are still among the weak points of German towns, although great improvements have been effected in these respects. Household slops running in the gutters are a common sight. There is no serious harm in it, but it is extremely unsightly. The streets are a weak point in other respects; the paving is generally of the roughest, and that is markedly the case here. There is much room for improvement also in the way of smoke-prevention, which does not seem to be attempted. The heavy pall hangs in the valley, particularly at the lower end of Elberfeld, and spoils the remnants of what must have been a beautiful scene before the chimneys multiplied. It is inexcusable, because it is not caused by foundries or furnaces. There is probably no spot where the handiwork of nature has been so badly marred, for the Monongahela Valley could not have been beautiful even before Mr. Carnegie went there. As one enters the lower end of Elberfeld by the hanging railway and glides over the blackened river through the iron work cage made by its beams and girders, past the forest of chimneys and the discoloured, dilapidated factory walls with the tall gaunt tenement houses looming through the smoke in the background and climbing up the hillside, the hideousness of it all is heightened by the gracious sweep of the hills, the glimpse of woods on their heights above the belt of bricks and smoke, and the rush and turn of the water below. Surely Elberfeld could do more to reconcile its industrial activity with the natural charm of its situation.

Vital Statistics of Elberfeld and Barmen, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
159,023	34·0	17·0	17·0	165
143,688	33·2	16·3	16·9	158

The proportion of illegitimate births was, as already mentioned, 5·8 per cent. in Elberfeld, and 3·0 per cent. in Barmen.

Miscellaneous Statistics.

Police.	Public houses.	Churches.	Theatres.	News-papers.	Free Libraries.
230	496	—	3	8	1
179	483	10	2	8	1

Crefeld.

The name is written with a K in official Government documents and by the local Chamber of Commerce, but with a C by the municipality and generally by the public;[1] so there is authority for both, and the stranger can take his choice. But, however the name is spelt, Crefeld is a very curious place. It is a purely manufacturing town, but totally unlike any other that I have seen in any country. In the first place there is no obvious reason why it should be the seat of manufactures at all. It is not near coal or running water or any such natural resource; nor is it on a great highway. It lies on the left side of the Rhine, but several miles from it, and about fifteen miles to the north-west of Düsseldorf, with which it is connected by a light electric railway running across a dreary and almost uninhabited plain. The site is perfectly flat. In the second place it is laid out in a very peculiar manner. The central part of the town is enclosed by four wide streets or boulevards, called the north, east, south and west "walls," which form a large rectangle; and the other streets are almost equally regular. The plan is on very modern lines, but

[1] A German correspondent has written to me to say that it is just the other way about, but with the documents before me I stick to my statement. His correction, however, is additional evidence that the spelling is optional.

the town is not. The building, again, is peculiar; the houses are neither the wooden-beamed, green-shuttered cottages of the smaller Rhineland towns and villages nor the many-storied blocks of modern urban Germany. They are small white houses of two or three stories. There is a foreign air—Dutch or Flemish—about it. But, however this may be, it is a highly attractive place, clean and tidy, with plenty of trees, gardens and open spaces. Its aspect is modest, quiet, and *freundlich*. Within the town the bustle of trade is conspicuously absent and nothing is to be seen of factory life. Yet Crefeld is as completely a mill town as Oldham itself, and the mills are hard by, ranged on the fringe of the streets—numerous, modern, red brick, business-like. They are chiefly devoted to the manufacture of silks and velvets, which form the great staple industry. Crefeld is the Lyons of Germany.

Little is known of the early history of Crefeld or of the origin of its rather singular name, which has taken many forms in the past, but it is a fairly ancient place. The earliest authentic mention occurs in 1166; and the dignity of a *Stadt* was conferred in 1373 by Kaiser Karl IV. Crefeld must have been then a centre of some local importance; it had the right of holding the weekly and yearly markets which are still a great feature of the town life. The textile industry does not appear to have come to the front until the seventeenth century, when the manufacture of linen was developed, if not introduced, by Mennonite immigrants. Silk was introduced in the latter half of the same century by the Dutch family Van der Leyen, who settled in Crefeld and worked up the business with great energy and success. Under the fostering influence of Royal patronage, free imports of raw materials and a protective tariff against manufactured goods, the Leyen mills throve mightily until they came to employ 3,000 workmen. These happy conditions passed away under French occupation in 1795; free competition with the manufacturers of France hit the German looms, just as it did the English at a later date when the duty on foreign silks was abolished. The re-establishment of Prussian rule and the Zoll-tariff restored their prosperity, and led to a

great extension of the industry. Hand looms have gradually given way to mechanical power, the number of mills has increased, and other associated industries—particularly dyeing, the manufacture of colours and of textile machinery —have been developed. The following figures show the average number of looms at work in the various branches of the silk industry in 1892 and 1901 :—

	1892.	1901.
Hand looms	13,766	6,551
Power looms	4,816	10,268

The best known institution in Crefeld is the Textile School, which enjoys a wide renown. A silk-weaving school has existed since 1855, and the present building was opened in 1883, when fewer rivals existed than to-day ; but it still holds its own and attracts many students from other countries. It is a fine building, planned on a generous scale, with broad corridors, numerous and spacious rooms, and has an ample installation of machines, a library and an exceptionally complete museum. Like all German educational institutions, it does not try to cover too much ground —a mistake made by some technical schools both in England and in America—but specialises in a well-defined direction. It aims at teaching the Crefeld industries, and it teaches them thoroughly ; but it takes account of new branches and helps to encourage them. The total number of students in the winter session of 1901-2 was 252, of whom 136 took the Sunday course, which is open to foremen. In 1895 the institution was extended by the addition of a dyeing and finishing school. The number of students in this department during the same session was seventy-two, of whom fifty-two had previously acquired practical knowledge in the factory ; only ten came from the university or technical high school. Special attention is paid to the artistic and scientific studies—design, colour and finish —which are of special importance in silk goods. The fees are £15 to Prussians, £22 12s. to other Germans and £60 to foreigners. The products of the looms are sold ; in 1901 they brought in upwards of £225. Besides teaching, the school undertakes the analysis of samples for the trade and

gives information to manufacturers, who for their part support and encourage the institution from which they draw their expert skill. There is no doubt that it has been invaluable in maintaining the reputation and industrial efficiency of Crefeld in the face of severe and increasing competition. In 1901 it cost the town £1,436, and the State double that amount.

In 1870 the population of Crefeld was 58,000; in 1900 it was 107,000. It is not increasing so rapidly as many of its neighbours. The curse of the textile town is on it, and the birth-rate is falling. In 1901 it was only 28·5 per 1,000, or nearly twenty below that of the iron towns just across the Rhine, Duisburg and Essen, and more than ten below that of its next door neighbour, the equally textile München-Gladbach. To some extent this is offset by an exceptionally low death-rate, 15·6 per 1,000, which leaves the sufficient margin of 12·9 per 1,000 excess of births over deaths. This is not the place to discuss the obscure and far-reaching problems involved in these matters; but it may be pointed out that a diminished death-rate is not a matter of congratulation in so far as it is merely the sequence of a diminished birth-rate. That is certainly the case to some extent in Crefeld; but apart from that the town is, no doubt, exceptionally healthy. The death-rate from consumption is among the lowest in the ninety-five chief towns of Germany, and that from typhoid actually the lowest. Among the causes of this fortunate state of things are an excellent water supply, superior housing conditions and good earnings. I have already mentioned that the houses run small as houses go in these towns, and the people are therefore less thick on the ground. The average number of persons to each house is only fourteen, compared with 18·7 in Elberfeld, 18·9 in Barmen and 19·5 in Düsseldorf. There does not appear to have been so much difficulty about housing in Crefeld, and, though rents are high, neither the town nor employers have been forced to do much in this direction. There is one Workmen's Dwellings Association, founded in 1900. It has put up buildings to house 128 families in flats of three to five rooms. The rents are from eighty to eighty-four marks per annum, or

1s. 6½d. to 1s. 7½d. a week for each room. Rent elsewhere in the town is considerably higher.

With regard to earnings, the silk mills afford employment to many girls and women, and consequently the family takings are good. They are employed both in weaving and in winding, but particularly the latter, which is generally done entirely by girls. A manufacturer who was acquainted with Bradford informed me that the girls are better paid in Crefeld. Weavers can earn up to 36s. a week, but that is exceptional. The place has been hit by the prevailing depression which set in in 1900, but less severely than its iron and steel neighbours. It has also felt the effects of hostile tariffs, particularly the American; but on the other hand the home market has expanded. Silk is an article of luxury, and as the standard of wealth has risen in modern Germany such articles have come more in demand. Crefeld still exports, but the home trade, which was only 31·46 per cent. in 1878, had become 55·41 per cent. in 1901. In spite of depression the town wears a prosperous look. There is a public-house to every 274 inhabitants, and I have been told that the factory hands drink one-third of their wages. That is, no doubt, too sweeping an assertion; but that it is not entirely a libel I have had some ocular proof. The factories are not large, but modern and good in every respect. I have nowhere seen a more admirably appointed mill than that of Messrs. Krahnen and Gobbers—a model of cleanliness, order and attention to light, air and sanitary arrangements. A great deal of the machinery in use at Crefeld still comes from England—not so much looms, which are now made largely in Germany, as dyeing and printing machines.

The population is chiefly Catholic; of the elementary schools thirty-five are Catholic, nine Evangelical and one Jewish. In addition to the usual higher schools and the royal textile schools already described, there are continuation schools, trade and art handwork schools, and a commercial school maintained by the Chamber of Commerce, with a department for girls. The number of male students in the summer session of 1901 was 369, of whom 314, or 85

per cent., came from the elementary schools; on the girls' side there were 156. They are taught arithmetic, book-keeping, French, shorthand and typewriting.

Crefeld is connected by railways with Cologne, Cleve, Duisburg and München-Gladbach, and, as already stated, with Düsseldorf by an electric line. It returns a Central member to the Reichstag.

VITAL STATISTICS OF CREFELD, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
107,762	28·8	15·7	13·1	177

Of the births 5·2 per cent. were illegitimate.

MISCELLANEOUS STATISTICS.

Police Force.	Public houses.	Churches.	Theatres.	News-papers.	Free Library.
125	398	8	2	16	1

MÜNCHEN-GLADBACH.

This town with a double name—commonly written M. Gladbach, to distinguish it from another Gladbach in the Rhine Province—is the centre of the chief cotton manufacturing district in Prussia. Germany is not pre-eminently famous for this industry, which is still in a comparatively early stage of development, and consequently the town is but little known to the world; but it has a particular interest for that reason. Here is to be seen a branch of manufacture in which Germany does not yet excel; and the manner of its cultivation and growth is worth noting.

In 1860 the population was about 17,000; it is now over 60,000, and the increase is due to cotton. There has hardly been a more rapid development in the Southern States of America. And Gladbach is only the centre of a large district more or less given up to the manufacture of cotton with the usual allied businesses. Between 1882 and 1895 the number of persons employed in the cotton industry in Rhineland increased from 20,160 to 36,026, a far more rapid rise than in any other part of Germany. The town itself is old, though the industry is young. It lies rather picturesquely on a hill. Here a church is said to have been

built in 793; and on its destruction a couple of centuries later a second took its place, together with a Benedictine abbey which was ruled by a succession of forty-six abbots down to the Napoleonic occupation. The name München is supposed to be derived from the monks (Mönche) who were so long connected with the place. The old minster church remains yet, a stately object, looking down from the steep escarpment of the hill upon the factories spread out below; the crypt dates from 972, and the nave from the twelfth century. A more striking chronological and architectural contrast is seldom seen. The old monastery buildings are now municipal offices. This old part of the town stands apart from the mills, which are spread out on the low ground to the south and east at the foot of the hill and constitute with their workmen's colonies, parks and schools a new quarter. The cotton industry appears to have been brought to Gladbach—which lies on the left side of the Rhine, about equi-distant from Crefeld and Düsseldorf and not much further from Cologne—by manufacturers from the Wupper Valley, who found it convenient for political or fiscal reasons at the beginning of last century to transfer their cotton business to the other side of the Rhine. Gladbach probably attracted them because it had a good labour market on account of the old hand-linen industry which had long flourished there, but latterly fell on evil days. At that time the spinning and weaving of cotton also was entirely done by hand. The first mechanical spinning plant was only put up in 1845, and spinning is still the weakest spot. In 1895, however, there were in the Gladbach district over 400,000 spindles at work. This is, of course, a trifle to Oldham with its 12,000,000 spindles; but then Oldham has been much longer at it and concentrates more on spinning, whereas Gladbach has a larger proportion of looms running. There is no doubt that Germany means to go forward with this branch of textiles; and an earnest of her intention is to be found in the new technical school opened in 1901 at a cost of £30,000. This is the latest thing of its kind, and in some respects surpasses any other that I have seen in Germany, England or the United States. It concentrates its energies upon the cotton processes, and is divided into three separate sections: (1)

Spinning; (2) weaving; (3) dyeing and finishing. The class-rooms are housed in a handsome, red-brick building, and the practical installation adjoining is laid out as a small mill, driven by a steam-engine of 120 horse-power. It is a model in all its appointments, lit from the roof, steam-warmed, provided with electric light and the most recent methods of ventilation. In the spinning section courses are held for manufacturers, managers and overseers. The course lasts one year, and consists of forty-two weeks of forty-four hours each. Sixteen out of the forty-four hours are devoted to practical work. Students must be not less than sixteen years old and have had a good school education; it is preferred that they shall have had a year's previous experience in practical work. The fees for the full course are £10 for Germans and £50 with £3 entrance fee for foreigners. The yearly fee for the workmen's course is 30s. It is interesting to note that in the carding process the machines taught are those of Howard & Bullough, Dobson & Barlow, Hetherington, Tweedales & Smaley, Platt, Lord, Asa Lees and the Elsässische Maschinenbau Gesellschaft; in mule-spinning those of Parr Curtis, Asa Lees, Dobson and Barlow, Platt and Threlfall. Lancashire still heads the world in cotton machinery at any rate. They spin up to eighty counts in the school, and there seems to be no reason why they should not spin up to 150 or more with the aid of sprinklers, as they do at New Bedford, Massachusetts. Skill is the thing lacking, and that they are determined to acquire. It is only a matter of time; we may expect to see the art of fine spinning mastered in Germany by-and-by, as others have been mastered by degrees. The other two sections of the school have very much the same conditions, except that the dyeing and finishing course lasts two years. The mill undertakes work for the trade, and thus to some extent realises the conditions of commercial production.

Another sign of industrial enterprise not far from the school is a large colony of workmen's houses erected by the local building society. They are of different sizes, but the most frequent type is a semi-detached, two-storied building, containing four families. They all have gardens and ample space about them. The yearly rent for a

dwelling of four rooms is £8, or about 3s. 6d. a week, which is very low for a really good house such as these are, and much less than in other parts of the town. The society gives workmen facilities for purchasing their houses, and a large number do so. Down to the end of 1902 it had built, since 1869, 615 houses for sale and thirty-one larger ones, housing 7,800 persons in all. A good many houses have also been built by employers, notably the firm of F. Brandts, who have provided many benevolent institutions for their hands, including a park and playground, which is open to the public. The rent for a dwelling of five rooms in these houses is £7 10s. per annum. Taken altogether the housing in Gladbach is decidedly above the average; rents are cheaper, and there is less over-crowding. The mills, many of which belong to companies, are also good. In other respects the conditions of industrial life are favourable. There are at least two public parks and an admirable set of public baths. These institutions figure prominently in most German industrial towns, and are splendidly equipped with large swimming baths, numerous and varied private bath-rooms, medicinal baths, steam engines, electric light, and so on. They are kept beautifully clean, and often have their own water supply from an artesian well. To any one who remembers the Germany of old—when no one could swim, bathing was thought a proof of insanity and washing a dangerous eccentricity—no change is more remarkable than the conversion in this respect. It is largely due, no doubt, to the teaching of hygiene, but also to military training. The daily bath is still exceptional in any class of society, but German workmen and factory hands are cleaner than our own, during the week at least. The sergeants take care of that in barracks, and the habit sticks.

About five-sixths of the population is Catholic and the town is the headquarters of the "Christian Trade Unions," whose newspaper is published here. Their organisations are called "Christian" to distinguish them from the "Social Democratic" trade unions. They were started in 1894 to meet the views of workmen who objected to the anti-Christian and revolutionary principles of Social Democracy, and their aim is to improve the condition of

the workpeople by legislative reforms and organised self-help, independently of political parties. They are counter-organisations to the other "free" trade unions in so far as the latter allow themselves to be exploited by the Social Democratic political party. Further details of this interesting movement will be given under the head of trade unions; it is merely mentioned here in connection with the town. At the recent election the Social Democratic candidate for this constituency was defeated by an immense majority.

Gladbach is connected by railway with Düsseldorf, Crefeld, Cologne and Aachen, and is the centre of a considerable traffic. For the rest it is an unpretending, busy little town, with irregular streets and low houses, rather ragged and unkempt on the outskirts, but not without attraction.

Vital Statistics of M. Gladbach, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
58,532	39·4	18·7	20·7	206

Of the births 4·1 per cent. were illegitimate.

Miscellaneous Statistics.

Police Force.	Public houses.	Churches.	Theatre.	Newspapers.	Free Library.
59	212	10	Winter Season.	—	—

Solingen.

In Solingen one enters a different world. It does not resemble any of the towns previously described, but has a peculiar interest of its own. The reputation of the little place goes back to the Middle Ages, and as it stands to-day it takes one back to them; it produced the same wares then, and to a certain extent it produced them under the same conditions. No industrial town has been so little modernised, in spite of the appearance of the factory and the building society's activity.

Solingen lies among the hills of the Berg country, almost due south of Elberfeld and on the road to nowhere. This country has great charm in a quiet way, and is very little known. If I remember right, Baedeker passes it over with contemptuous and ill-deserved brevity. But English

holiday-makers who do not always want to go where every one else goes might well turn aside here instead of rushing on to the Upper Rhine or some other cockneyfied playground. It is only a few miles beyond Düsseldorf, which is but thirteen hours from London. I commend it to pedestrians and sketchers. They will find a land of deep winding valleys thickly clothed with wood, picturesque villages and old-fashioned inns, running water everywhere, and, tucked away among the hills, artificial but charming lakes of blue water made by damming up the valleys to form reservoirs. For central points there are the noble Schloss at Burg, the model of a mediæval stronghold, and the Dom at Altenburg, the rival of Cologne, hidden away as it is in the heart of the country. These details have something to do with Solingen and its neighbours in more ways than one. The hill-reservoirs supply them with water; the power obtained from the streams explains the selection of this neighbourhood for the cutlery industry, which was originally introduced by the great noble, Graf von Berg, whose family seat was the Schloss of Burg. The brooks, which are innumerable, turned the cutler's grindstone or worked the forge; and to this day more than one of these lovely valleys is but a series of little rural factories extending for miles, one below the other, each with its head of water. The whole countryside is filled with iron and steel hand-industries, and the two capitals are Solingen and Remscheid. They lie on either side of the deep valley of the Wupper, into which the smaller streams find their way. The former is the headquarters of the cutlery, the latter of the file-cutting industry. There are many minor centres, such as Ronsdorf, Cronenberg and Lüttringhausen; their spires rise against the sky-line, for it is a peculiarity of this country that the towns are on the high ground; they look at each other across the valleys. So it is with Solingen and Remscheid. The railroad which joins them crosses the valley at Müngsten by the famous high-level bridge, which was opened in 1897. It leaps the river by a single span 520 feet long and 348 feet above the bed of the stream. The view from the bridge is striking. The only blot on the scene is the unfortunate Wupper, which still carries the foul burden of Elberfeld's refuse and trails its inky slime—a broad,

black sewer—through the green woods for miles and miles past cottage and castle. The clear little brooks, hurrying down from the side valleys, disappear for ever in its filth; all beauty and romance die at its poisonous touch. How long are people here going to put up with this abomination?

Solingen fits well with the neighbourhood. It is delightfully old-fashioned and remote, a maze of little crooked hilly streets, queer turns and corners; full of houses small and low—really cottages—green-shuttered, laced with timber beams or faced with slates. It has a population of 46,000 or so, and is the centre of a populous district; so we must call it a town, a busy, brisk and cheerful country town, though it has rather the characteristics of a large village. Sheffield must have been like this once long ago. The people are all engaged in the cutlery trade or minister to it; about 29,000 are employed in and about Solingen. They make knives and forks, scissors and swords. The art is believed to have been brought from Damascus by Graf von Berg on his return from the Crusades; but an alternative theory traces it to importation from Styria. However this may be, Solingen workmen early acquired a wide reputation and sometimes took their skill far afield. One of the names found on old Toledo blades is German and still borne by cutler families in the place. The art was jealously guarded by the old guilds—the smiths, temperers, grinders, and finishers—who strictly limited the apprentices and the output. Every master had to have a trade mark, which was registered by the local authority, nailed up on the church door and had a legal validity. The famous sign of the Twins dates from 1731, when it was registered by Peter Henckels; it has been borne by the same firm ever since. Their factory is the largest in the place; but out of 2,000 workmen only 800 are employed in the works; the remaining 1,200 work at home. This is the rule; the great bulk of the industry is carried on at home, as in old times, on the "chamber system". It is encouraged by the local authority, which provides the men with gas and electric power, in lieu of the old water wheels. It has thus been preserved and developed alongside of the factories, which first came in during the last century and

helped to revive the trade which had come to grief during the French occupation. (How often one hears the same story of Prussian industries!)

I have had no opportunity of observing the conditions under which this "dangerous" trade is carried on at home; but they cannot be worse than those prevailing in the tenement chambers at Sheffield, and are probably better. In 1898 the Government Factory Department at Düsseldorf issued a special order in consequence of the prevalence of phthisis among the grinders. In the ten years 1885-95 72·5 per cent. of the deaths among knife-grinders in the Solingen district were due to phthisis, against 35·3 per cent. for the rest of the population over 14 years of age; and an official medical examination showed that out of 1,250 grinders, only eighty-five were over forty five years old. These facts, which are all the special information I have on the subject, hardly warrant any conclusion without further details; and I notice that the death-rate from consumption in Solingen for 1901—namely 3·1 per 1,000—although above the average for German towns, is exceeded elsewhere—for instance: Breslau, 3·4; Ludwigshafen, 3·4; Treves, 3·2; and Heidelberg, 3·2. The average for the whole of Germany in 1892-1900 was 2·4. One is therefore rather surprised that the Solingen figures are no higher; the place is fairly healthy, in spite of the occupation, as the general death-rate—18 per 1,000—sufficiently proves. As I have said, however, the departmental authority issued a special order relating to the installation of grinding shops and the removal of dust. In the Henckels Works the arrangements are quite admirable. Great cleanliness is observed in the smallest details, light and ventilation are ample, extracting fans carry off the dust more efficiently than I have ever seen it done anywhere else, and everything tending to raise dust is carefully eliminated as far as possible; the driving straps and wheels are lodged in a gallery or passage between two shops, and therefore outside the room; the stones and emery wheels are protected by special and ingenious hoods. There are other factories in the place equally good, and I should like to have the opinion of Sheffield manufacturers upon them. I know their opinion of German cutlery, and it would surprise those compla-

cent Englishmen who still think the word "German" is synonymous with "inferior". Cheap and inferior cutlery is turned out at Solingen, but the German manufacturers also produce goods of first-rate quality, and are able to compete with Sheffield on their merits. I should not venture to say so on my own judgment, but my authority for the statement is the highest. That they turn out very beautiful things cannot be denied; I have seen exquisite specimens of damascened, inlaid, and other fancy work. I recently bought a pocket-knife for a boy in London. After looking at a great many patterns I picked one out and asked: "Where does this come from? Solingen?" The man did not know what I meant but said: "That is by a German maker". "Ah! I thought so; it is from Solingen." "Well," said the man apologetically, "they are much better finished than these made in Sheffield." And it was true. The superior Solingen cutlery is not cheap; the material is the best crucible steel made from Swedish iron, the same as Sheffield uses. An extraordinary thing about the cutlery trade is the almost incredible variety of knives made. At the Suffolk Works in Sheffield, for instance, they have 10,000 different patterns on the books, and will be actually making 3,000 to order at the same time. I found just the same thing at Solingen; Henckels have 9,000 patterns for Germany alone. Every trade, every country and even every district has its own knives; the Somerset ploughboy wants a different knife from the Yorkshire ploughboy, and new patterns are constantly coming out; the Suffolk Works have averaged ten new patterns a week for two years. This is a trade which will not be standardised, and that is one reason why America has hitherto failed to compete. Let the fact be noted to the credit of European alertness and attention to the needs of the market.

The cutlers of Solingen are highly organised in all branches of the trade, though I do not find them down on the lists of any of the large trade federations. The employers also are organised, and there is a joint machinery for settling disputes and prices, similar to that of the Lancashire cotton spinners. Boys are usually taken as apprentices; this is looked after by the unions, who limit

the number. Very few girls are employed. Wages are very much the same as in Sheffield. The appearance of the factory has set up the usual housing difficulty, which has been met by building societies. They borrow money from the Landesbank of the province, and the town guarantees 3 per cent. interest. The houses built are of two kinds: (1) Small houses for minor officials; (2) larger ones containing four to six families of workmen. The average weekly rent is about 1s. 6d. a room. Many of the workpeople in the district own their houses; and it is the custom of the place for them to keep a goat, the "poor man's cow". There are 14,000 goats in the Solingen district.

The population is mainly Evangelical, in the proportion of three to one. Although a comparatively small place, the town has been educationally in advance of many of its larger neighbours, and adopted compulsory continuation schooling sixteen years ago. Solingen is one of the constituencies which went over to Social Democracy at the election of 1903.

Vital Statistics of Solingen, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
45,775	34·5	17·9	16·6	170

Of the births 2·4 per cent. were illegitimate.

Miscellaneous Statistics.

Police.	Public-houses.	Churches.	Theatres.
31	328	—	None.

Seven towns have now been described in considerable detail. They have been selected in order to represent a number of different industries and to give a fair general idea of the conditions of life in some leading Prussian manufacturing communities. The list might be indefinitely extended, and in every town added some variations and peculiarities would be noted; but there would be a great deal more of mere repetition, and even if space permitted I do not think much would be gained by it. Anything like a comprehensive list is quite out of the question; the number of towns and villages engaged in manufactures is far too great to permit even of the

scanty treatment of a gazetteer in detail. One must make a selection, and I have done so to the best of my judgment. The places described, however, although very varied, are all in one Government district, and I will, therefore, add a few notes on Aachen and on some of the Westphalian towns, of which Dortmund is the most important.

Aachen.

Aachen, better known to English readers as Aix, is the capital of the most westerly division of the Rhineland. It lies hard on the Belgian frontier and on the main line from Brussels to Cologne. It is separated from the manufacturing Rhine district of Düsseldorf by an extensive stretch of flat agricultural country, which gives way to hills and woods near Aachen. The town itself lies on hilly ground and in the neighbourhood of extensive coalfields. Of its famous historical past I need say nothing, except that the principal remains—the minster, town hall, central ring formation, and one or two old gates—give it considerable dignity and interest. The town hall is especially fine. Although the body of the building dates from the fourteenth century, it is more commanding and impressive than the most ambitious modern town hall I have seen, which is, I should say, that of Philadelphia. It overlooks the market-place, which on market days presents a busy and characteristic scene. Covered markets are much less common in German than in English industrial towns; perhaps the more settled weather makes them less necessary; but the old-fashioned open-air booth markets are held regularly, as they have been for centuries. They form a picturesque element in the life of the people, and have an attraction for housewives which the co-operative store wholly fails to replace. It is human nature, immemorial and unchanged among the people—that rock whereon economic theories are perpetually foundering.

As a modern town of medium size Aachen is well-ordered and comely enough. Its waters still attract some 70,000 visitors annually, of whom 20 per cent. are English. The population is about 136,000, overwhelm-

ingly Catholic (about twelve to one), and not growing so fast as that of most of the industrial centres previously described. The natives have a character for gaiety and humour; they vie with Cologne and Düsseldorf in the annual plunge into licensed insanity that lasts for three days at carnival time. For the rest of the year they are as industrious as their neighbours. As regards manufactures, Aachen is largely a woollen town; it spins and weaves and dyes woollen and worsted goods, and it supports a textile school especially devoted to those branches of manufacture. The present school was built in 1888-90. It is divided into four departments: (1) Weaving, (2) spinning, (3) finishing, (4) dyeing; and aims, like the Gladbach school, at providing practical experience on a commercial scale by manufacturing for the trade, for which it has the requisite installation. Its strong point is dyeing. The conditions of study are very much the same as those in the similar schools previously described; but the courses are somewhat shorter, and the fee for foreigners is only £40 a year. Evening courses are given to foremen and workmen for 30s. and 10s. per annum respectively. The present number of students is about one hundred, of whom twenty-five attend the evening courses. A unique feature is a course of instruction for women and girls in darning or making good defects in woven cloth. The school, which was originally started in 1883 by private enterprise, is still partly supported by the "Aachener Association for the Promotion of Industry," a remarkable society which dates from 1825 and now possesses a capital of over six millions sterling. Its revenues are devoted to the support of a large number of benevolent institutions and other public objects. In addition to the wool industry, Aachen is famous for the manufacture of needles, a trade introduced in the sixteenth century from the Spanish Netherlands, and so faithfully preserved and developed that the town has almost a monopoly of the home market and is a formidable competitor in the markets of the world. Some of the factories are quite inside the town, but the majority are on the outskirts. The textile mills number about one hundred, and employ some 15,000 workmen. Just outside the city are the famous Rothe Erde

iron and steel works of the Aachener Hütten-Actien-Verein. The equipment for the production and manufacture of Bessemer and open-hearth steel is one of the most complete and modern in Europe. Aachen is the seat of the only "Technische Hochschule" in the whole of Rhineland and Westphalia, which seems somewhat singular considering their pre-eminent industrial importance.

Vital Statistics of Aachen, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
136,275	34·6	20·2	14·4	214

Dortmund.

Dortmund is the commercial capital of Westphalia and a place of importance, though not the seat of a provincial Government. It lies in the great coal basin which, as I have already pointed out, runs due east from the Rhine, where the river Ruhr joins it, and is the actual begetter of that remarkable chain of iron towns—Ruhrort, Duisburg, Oberhausen, Essen in the Rhine province and Bochum, Hagen, Horde Dortmund, Hamm, and others in Westphalia—that form one of the greatest assets in Germany's wealth and industry. It is in this series of towns that the Social Democratic party obtained such a large accession of votes in the last election to the Reichstag. Nor is the reason far to seek, if the mere observer of social conditions, apart from politics, may be allowed to have an opinion. The population consists mainly of coal-miners and iron-workers; and these are the backbone of the trade unions which have been sedulously cultivated by the Social Democratic party for years. Further, it is just these industries that were most affected by the depression of trade which set in in 1900 and lasted until recently. Many were thrown out of work and a great many more reduced to short time. At a large trade union meeting of miners held in the spring of 1903, it was stated that the earnings of half the membership had fallen 73 per cent. since 1900. The men were just in the humour to vote for a political party which promises them a great improvement in their

condition, whether they believe in the promises or not. It stands for change of some sort.

Such is the region of which Dortmund is the centre. The town is surrounded by coal mines, coke-ovens and iron-works, and is the terminus of the Dortmund-Ems Canal, a fine engineering, but not, I believe, a commercially successful, undertaking. The population, which has increased very rapidly of late years, now numbers about 146,000, of whom rather more than half belong to the Evangelical communion. The industrial development has taken place on the outskirts of the town. The central part is old and interesting, and of much the same type as Aachen, for Dortmund, too, has a history. It was a walled city from very ancient times, a Hansa town and the seat of the mighty Fehmgericht. The old walls are now exchanged for wide boulevards, but I notice that towns of this class are generally less well provided with parks and open spaces than those with a less stirring past. Dortmund is officially important as the seat of the head post office of the province, and it derives from this distinction the advantage of possessing a magnificent building. The State generally houses itself well in Prussia, and the post offices are particularly handsome and solid structures; but the Dortmund head office is quite exceptional. I have nowhere seen anything of the kind so fine. There are some other good buildings, including a very interesting old guildhall and a similar restored town hall, no longer used. Educationally the only point to be noted is a technical school of engineering. Like the other iron and coal towns, Dortmund has a very high birth-rate. Here lies the assurance of Germany's strength—her abundance of children. Truly she has her quiver full of them. In the country coal districts the birth-rates are still higher, and sometimes go up to 60 per 1,000. The conditions of life seem very good in the rural coal region about Dortmund. The colliers live in single cottages with gardens, very tidy and clean-looking, and stretches of cultivated land separate each pit settlement from the next. The Westphalians are a race of great character, reminding one in many respects of the Yorkshire folk, just as their land strongly resembles Yorkshire; they are very independent, reserved self-willed and conservative—a sturdy, vigorous stock.

Vital Statistics of Dortmund, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
146,408	43·0	19·9	23·1	190

Of the births 4·5 were illegitimate.

Next to Dortmund, the most important town in the Westphalian manufacturing district is Bochum, with a population of about 67,000 (1901). It lies half-way between Essen and Dortmund on the main line and belongs to the same class of industrial community, being the seat of some of the largest iron and steel works in Germany and of a number of subsidiary metal manufactures such as tubes and wire. It owes its rise as a town, which has been very rapid, wholly to the development of these industries; and its appearance attests the fact, for few places in England present a more uncompromisingly coal and iron aspect.

Hagen runs it hard in population, in industrial production and in smokiness. This is a town of 64,000 inhabitants, lying a little to the south, but in the Ruhr district, and with all the Ruhr character. I do not think any one who makes a tour of these places will contend that the prevention of industrial smoke is secured much more effectually in Germany than in England. My own impression is rather to the contrary, with some exceptions, though I readily admit that German towns are much brighter, cleaner, and less dingy than English ones. But that difference is chiefly caused by the comparative absence of domestic, not of industrial, smoke, in consequence of the different mode of domestic warming.

Where smoke-producing works are carried on they emit as much smoke as in England in proportion to their size and number. The works at Hagen are numerous and varied, but the chief products are the smaller iron and steel wares—tools, machine tools, hardware, spades and shovels, files, saws, locks, screws, and so forth. It may be said to resemble the South Staffordshire towns in its industrial character. The importance of Hagen is considerably enhanced by its being the seat of the principal school of engineering in the district. Bochum has a mining and a metallurgical school.

I will conclude this section with a table giving the very remarkable vital statistics of the chief industrial centres in the Ruhr district.

VITAL STATISTICS, 1901.

Town	Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
Alten-Essen. .	34,599	54·1	24·8	29·3	239
Bochum . .	66,917	42·4	25·1	17·3	184
Dortmund . .	146,408	43·0	19·9	23·1	190
Duisburg . .	95,350	46·1	21·2	24·9	182
Essen . . .	187,385	46·1	20·7	25·4	165
Gelsenkirchen .	37,560	49·0	25·0	24·0	190
Hagen . . .	64,042	39·2	18·5	20·7	167
Hamm. . .	31,695	39·4	17·2	22·2	162
Horde . . .	25,822	47·1	20·5	26·6	185
Mülheim . .	39,079	39·0	19·2	19·8	208
Oberhausen . .	43,547	50·2	20·7	29·5	221
	Mean	45·0	21·1	23·9	190

The remarkable fact about these figures is the very high vitality of the population shown. The group of towns may fairly be compared with the South Staffordshire group in England, which also have an exceptionally high birth-rate among English towns and are inhabited by a population engaged in very similar occupations though the coal-mining element is larger in Germany. The following are the comparative figures which speak for themselves:—

MEAN VITAL STATISTICS, 1901.

	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
German group . . .	45·0	21·1	23·9	190
English group . . .	34·8	17·5	17·3	178

Saxony.

If the Rhine-Westphalian region just described may be called the Yorkshire of Germany, the kingdom of Saxony is its Lancashire. The population is nearly the same—4,202,216 (1900)—and if not equally, at any rate chiefly, engaged in manufactures of a not dissimilar character, combined with a certain amount of mining. But in Saxony both the mining and the manufactures are more varied. Lancashire is virtually given up to cotton and coal; it spins, weaves, dyes and prints cotton for all the world, and makes machinery for doing these things; if they are taken away what is left amounts to very little, for various other once flourishing industries—paper, glass, watches and hats—are either decayed absolutely or have become relatively unimportant. Saxony is less dependent on a single article. Its mines produce silver, lead, copper, arsenic, bismuth, nickel, zinc, iron, and other things, besides coal, and its manufactures are very varied. Out of 550,000 work-people, 185,000 are engaged in textiles, 81,500 in engineering and machinery, 35,500 in the preparation of metals, 30,000 in papermaking, 36,000 in clothing, 51,000 in mining and quarrying, 7,000 in the production and smelting of ores, 6,000 in leather and 5,000 in chemicals. The textiles alone show much diversity. They include the spinning and weaving of cotton, wool, worsted, jute, silk and linen into a great number of articles—cloth of different kinds, ladies' dress materials, underclothing, men's neckties, furniture stuffs, carpets, curtains, thread—and the manufacture of lace, stockings and gloves of cotton and silk. These, with the machinery for producing them, constitute the most important branches of manufacture. They are carried on in all the five districts into which the kingdom is divided. It is a veritable hive of industry, more thickly populated than any other section of Germany or than any other European country. The number of inhabitants to the square kilometre is 280; the little principality of Reuss (the elder), which adjoins Saxony and is of the same industrial character, comes next with 216, and then the Rhineland with 213 (though it should be noted that the density of the special industrial area of Rhine-Westphalia is much greater, reaching 1,639 at its highest

point). England and Wales come just between these two with 215; and all three are a little behind Belgium, which has 229 and is the most densely populated country in Europe next to Saxony. The manufactures rather cluster round the larger towns, but are by no means confined to them. As in Lancashire and Yorkshire, they overflow, so to speak, into the smaller towns and villages, which in some districts form a continuous series of factory settlements, particularly along the rivers. It is, no doubt, largely due to the excessive competition thus engendered that wages are so much lower here than in Prussia. The Saxons are a prolific race; from 1816 to 1900 they have maintained a higher mean rate of increase than any other section of the German people. They have had to work very hard to keep their place; over and over again in the history of their industries some staple branch on which they relied has been reduced by competition to an unremunerative level and has been given up. Theirs is no story of facile conquest and sudden industrial development, but of steady labour and unremitting effort. The Saxons are a brave, solid, industrious and friendly folk. No one can help liking and respecting them.

Chemnitz.

The largest towns in Saxony are Leipzig (456,124), Dresden (396,146) and Chemnitz (206,913). The figures are from the census of 1900. The present population of Chemnitz is reckoned to be about 230,000. It is the most important manufacturing centre in the kingdom, for Dresden and Leipzig, though the seats of extensive manufactures, are not primarily or principally industrial. The one is the capital and the seat of Government; the other is the chief centre of trade. But Chemnitz is of the pure industrial type and the largest single town of that type in Germany, though Barmen and Elberfeld, which actually form one community, exceed it together. Chemnitz is often called the Manchester of Saxony, and the inhabitants appear to take some pride in the nickname; but in my opinion it is not very flattering and would be better applied to Leipzig. I have already described Manchester, and will merely repeat that however admirable the busy energy of

its inhabitants may be, no one can call it pleasant to the eye. It has all the defects of a great city in an exceptional degree—the crowding, noise, vice, squalor and grime—and they are not relieved by pleasant country surroundings, which is the happier case of the equally grimy and unlovely Sheffield or Leeds or Elberfeld. Now Chemnitz bears no external resemblance at all to Manchester, though its industrial activity runs on similar lines. It is a clean, rather quiet place, not devoid of picturesqueness. Its heart is a ring, once walled and towered; and a ring has always the flavour of a romantic past, though hardly a trace of the fortification remains. Chemnitz is an ancient place with a history very much like that of several towns already described. It began with a religious foundation in the Middle Ages, became a market town and trading centre, secured independence and self-government for a time, but went through the usual vicissitudes incidental to the quarrels or bargains of overlords. Of course the Thirty Years' War, which figures somewhat monotonously in the history of all the larger German towns, did not spare a walled city lying on the high roads from Prague and Nürnberg to Leipzig and the north. In spite of all the regular visitations, however, Chemnitz continued to maintain and increase an industrial position first gained in the fourteenth century, very much as Elberfeld gained hers, by securing a monopoly of the right to bleach the linen produced in the neighbouring villages; but, unlike Elberfeld, it has not destroyed the river to which it owes the origin of its prosperity and importance. The little Chemnitz still flows bright and clear through the town, and adds in no small measure to its attractiveness.

As the industries and the population increased during the last century new streets were thrown out in all directions in an ever lengthening radius from the central ring. They are tidy streets of an unpretending character with quite good shops. There is something homely and friendly about the whole place. The factories are not hidden away in the background, but are all about and very much in the foreground; yet they are singularly inoffensive. The atmosphere is clear and the buildings unblackened. The ground is varied, rising steeply to the Kassberg on the western side

of the river, which flows due north through the heart of the town. The open spaces, market places, parks, and so on, are unusually abundant and attractive. One of these is connected with the Schloss, which is really the old Benedictine Abbey, and now belongs to the city. Few towns, industrial or other, have such a charming playground so close at hand. There is a large sheet of water with an island, flower gardens and walks, overlooked by the Schloss, and on higher ground at the back an extensive and wooded park. Another fine open space quite in the town is the Schiller-platz, with a large market-place adjoining. Between them stands, conspicuous and imposing, one of the numerous modern churches which testify to the piety of Protestant Saxony and are not less striking than those of the Catholic Rhineland noted above. This church was built in 1888; it has a lofty spire, and high up a clock dial illuminated at night, a welcome landmark to the stranger uncertain of his way. I owe no little gratitude to that church. Some other buildings on the Schiller-platz are worth noting, as signs of the industrial character of the place. At one end is the largest cotton mill in Saxony. Chemnitz is the headquarters of cotton-spinning; the first rude machine was set up there in 1782, and many efforts were made to improve it, as the spinners found it impossible to obtain the superior machines of England and France. In those days the secrets of machinery appear to have been much more jealously guarded than they are now. One country would not allow its inventions to go to another, nor were foreign workmen or students allowed in the shops where such things were made. It was not until the nineteenth century that cotton-spinning machines were brought into Saxony from England and France. There was the same trouble with wool-combing and spinning. The secret of the English machinery was first brought into Germany by a Thuringian manufacturer, who went to England to learn it disguised as a journeyman carpenter. In this capacity he was able to study the construction, and on his return he built himself a machine; but he also kept it to himself. The Saxon manufacturers failed to learn the secret until about 1820, when they obtained machines from France. To this day spinners and combers are the most jealous of all manufacturers, except chemists, and many of

them will not allow their dearest friends to enter the mill. Such exclusiveness is quite as common in England as in Germany, but the trade in machinery is no longer kept close. Indeed, the prosperity of Lancashire and Yorkshire has for many years largely depended on the exportation of textile machinery; and the increasing independence of Germany in this respect is one of the most significant signs of her increasing industrial efficiency.

No town has contributed more to that independence than Chemnitz. Its pride lies in the production of machinery and tools even more than in the textile branches of manufacture. Some large works make it in certain lines the most important centre for machinery in Germany. The Sächsische Maschinen Fabrik and the Chemnitzer Werkzeug Maschinen (machine tools) Fabrik are known all over the world, and will be better known, unless I am much mistaken. The workshops of Manchester, Oldham, Keighley, and other machinery centres have no more formidable competitors in the markets of the world. The rise of the Sächsische Maschinen Fabrik is a worthy counterpart to the story of Krupps. The beginning of machine building in Chemnitz dates from 1826, and the pioneer was a man named Haubold. He built the first steam engine in 1829, and to his workshop came one day a young mechanic named Richard Hartmann, in search of work. Hartmann was born in Elsass in 1809, and was not only an uncommonly good workman, but something of a genius. He got work at once at Haubold's; but after a few years, having ideas in his head, he started a little workshop on his own account with three journeymen. That was in 1837. In 1841 he had got on so well that he moved into larger premises, where he employed seventy-six men, and the same year he delivered his first steam engine. He then built himself a new factory and added locomotives to his output. The first was delivered in 1848. He next went on to build looms for the local industries, and in 1854 he set up his own foundry. This was about the time when the tide of fortune turned for Alfred Krupp and began to flow steadily onwards. Hartmann appears to have never looked back. He went on from one branch of engineering to another, adding machinery for mining, milling, all kinds of textile work

and other manufactures, besides machine tools. In 1870 he sold the works to a company for nearly half a million sterling, but retained his connection with the concern, which continued to prosper and is still better known by his name than by that of the company which it bears. At the present time when in full work it gives employment to about 5,000 men, and turns out all kinds of engines, locomotives, locomobiles, boilers, turbines, cranes, hammers, rails, tires, rolling mills, machinery for mining, for saw and flour mills, for manufacturing paper, guns, torpedoes, and every kind of textiles. They manufacture very largely for the export market and send their goods all over the world. This is not altogether the "dumping" of surplus production, for it has been going on very steadily for many years. Between 1880 and 1890 the foreign orders amounted to nearly one-third of the whole. Dumping is a blessed word, but Englishmen will be well advised not to trust too much to its consolations. We have done a good deal of dumping of our own in our time, and then it was called legitimate trade; but we do uncommonly little now in Chemnitz. The workshops of the Sächsische Maschinen Fabrik contain a number of the beautiful automatic gear-cutting and screw-making machines by Brown and Sharpe, of Providence, but only one solitary English machine, and that an old one. The works cover a great deal of ground, and the shops are admirable, well lighted, orderly and beautifully clean. A large new foundry, recently built, is a model. The only foundry I have seen equal to it is, oddly enough, that of Brown and Sharpe, but the latter is on a much smaller scale.

Among the other prominent industries of the town are hosiery and gloves, chiefly of cotton. Chemnitz is the headquarters of both trades, and among the firms which carry them on is an English house, the Nottingham Manufacturing Company, which has mills also at Leicester and Loughborough, I believe. The knitting machines are still chiefly English, and England is one of the chief markets for the goods. The United States used to be a great customer, and still is to some extent; but the trade, which underwent a great expansion about twenty years ago, has been hard hit, like many another, by the Dingley tariff. The

yarn is chiefly spun in Chemnitz and the neighbourhood. The work-people employed in the knitting mills are mostly girls and women, who make about 10s. a week. The employment is not arduous and seems to be healthy; the rooms are comfortable, well ventilated, well lighted and warmed in winter; and the girls look very well and strong.

The weaving industry in Chemnitz has gone through many vicissitudes, and is not so important as it used to be. At one time calico was one of the staple products of the town, but after 1840 the trade declined, and coloured cotton goods, particularly ginghams, took its place. These in turn were forced out of the market by excessive competition, which depressed wages below a living standard and compelled weavers to turn to something else. They then took up wool and mixed goods of wool and cotton or silk, for dress materials and neckties in particular. To these were added furniture stuffs—tablecloths and curtains—woven in patterns on Jacquard looms, which had been introduced into Saxony in 1827. The latter trade increased and flourished, as did the half-silk goods, but the neckties yielded to the vicissitudes of fashion, and in half-wool dress materials Chemnitz was beaten by its neighbours, Glauchau and Meerane, which are now the chief centres for these articles. Another branch of textiles on which the Chemnitz weavers have tried their hands with more lasting success is parasol and umbrella cloth.

I have just mentioned Glauchau and Meerane, and may as well take this opportunity to say a word about some of the more important industrial towns of Saxony outside of Chemnitz. They are very numerous, as I have already said, and their products tend to run in the same general lines, but with special developments.

Glauchau is a town of about 26,000 inhabitants in the Chemnitz district, and one of the oldest seats of the textile industry in Germany. Cloth-weaving is mentioned in 1422 and linen in the following century; cotton was introduced in 1713. The principal trade is now in superior dress materials for ladies. All the processes are carried on here—combing and spinning, weaving, dyeing and printing. Basket-making is another local industry.

Meerane is also a wool town, not far from Glauchau and about the same size (24,000). In addition to dress materials they make underclothing and carpets. In the winter of 1902-03 the weavers came out on strike for three months, and in the end obtained an increase of wages.

Zwickau is the centre of an administrative county, and a place of somewhat more importance, with 56,000 inhabitants. In addition to textile manufactures of wool, half-wool and cotton, it has a good many metal and chemical industries—lead, copper, quicksilver, alloys of copper, zinc and nickel, nails, wire ropes and lacker, as well as glass and porcelain. There are numerous coal mines in the district.

Plauen (74,000), in the Zwickau county, is, next to Chemnitz, the largest of the purely industrial towns of Saxony. It is the centre of an important textile district, particularly for worsted, the headquarters of which in Saxony are at Reichenbach (25,000), about half-way between Plauen and Zwickau. In Plauen they also make thread, lace, carpets, cotton and mixed dress goods. At Olsnitz (14,000), in the same neighbourhood, the manufacture of Axminster carpets is a specialty.

Freiberg (30,000) lies between Chemnitz and Dresden, and is distinguished as an educational centre. It is the seat of one of the two special high schools of mining in Germany; the other is at Klausthal. The industries carried on at Freiberg are chiefly engineering, metals and chemicals.

Bautzen (26,000) lies quite in a different direction in the north-east corner of Saxony, near the Silesian border. Besides cotton, wool, hosiery and machinery, it produces a specialty in the form of musical instruments.

Meissen (20,000), near Dresden, deserves mention as a pottery town. The Royal Works, where Dresden china is made, are here, as well as other pottery establishments.

It will be seen, even from this selected list, that the manufactures of Saxony are much scattered about in small towns; but the places mentioned are the more important centres, and only a fraction of the total number. They are all surrounded and interspersed by lesser ones. In Saxony, indeed, the idea of having the manufactures in the country rather than in the town is to a large extent realised; and this does something to relieve the urban overcrowding

which is still more marked than in the Rhineland. But the lack of housing is so great that overcrowding extends to the villages. The average number of households to each inhabited dwelling in the villages of Saxony is two, and the average number of persons 8·85. In the manufacturing counties of Zwickau and Chemnitz the number of households per house rises to 2·17 and 2·45 respectively, and the number of persons to 10·01 and 10·67. That is in the villages alone. It is partly due to the fact that in the larger towns many of the factory hands either cannot find lodgings at all—cottages are not to be thought of—or cannot pay the rents, which amounts to the same; and, consequently, they live in the surrounding villages. This is particularly the case with Chemnitz, and the practice is facilitated by the electric trams. The work-people travel in and out every day a distance of an hour or even two hours' journey. Thus it happens that in the villages round Chemnitz the average number of households is 2·94, and of persons 12·77 to a house. Near Dresden and Leipzig the figures are still higher. Of the towns Chemnitz itself is the most overcrowded. Tenement life is universal, the average number of households is 6·87, and of persons 29·16 to a house. In the most densely-populated parts the number of persons to a single house runs from 130 to 173.

It is not surprising, therefore, to find a high death-rate, and particularly a high infantile death-rate. In Chemnitz the latter is enormous, and needs some further explanation. The town may fairly be compared with Elberfeld, which also suffers from overcrowding; but in 1901 the general death-rate in Elberfeld was 17·0 per 1,000 living and the infantile (under one year) rate was 165 per 1,000 births; the corresponding figures for Chemnitz were 23·8 and 331. One third of the children born died within a year, and out of 5,000 deaths among the whole population, 2,744, or considerably more than half, were of children less than a year old. In fact, if the infantile deaths be deducted, the general death-rate is low. The subject is discussed at some length in his annual report by the medical officer. It appears that no epidemic fever accounts for the fact; nine-tenths of the deaths were ascribed to "gastric and

intestinal catarrh and atrophy," otherwise inflammation of the digestive tract and malnutrition. The causes he suggests are lack of medical advice (a doctor was only called in 8·1 per cent. of the cases), bad housing, overcrowding, bad feeding and dirty feeding-bottles. No doubt these are all effective causes, but they are not peculiar to Chemnitz or to Saxony, and they do not go to the root of the matter. An examination of the infant mortality over a wider area reveals several facts—(1) It is excessive throughout Saxony as a whole; (2) but far higher in the textile districts than in the others. Zwickau is nearly as bad as Chemnitz. In 1900 the infantile deaths were in Zwickau 33 per cent. of the children born, in the town of Chemnitz 36 per cent., and in the district of Chemnitz 40 per cent.; whereas in Leipzig they were 24, in Freiberg 23, in Dresden 20 per cent., and in other parts still less. If we further compare the textile districts in Prussia we find two things: a lower infantile mortality and also a lower birth-rate. If we go still further and compare the English textile towns we find both again lower, but the birth-rate very much lower. These facts bring us face to face with one of the most profound and important problems of civilisation. The higher infantile mortality in Saxony cannot be attributed to inferior education, for that kingdom, which has for years made continuation schools general and compulsory, is distinctly ahead. The real explanation I believe to be this. In Saxony wages are low and the people have never learnt to enjoy and look for a high standard of comfort. They still take life as it comes, and it comes with many children. Some of these are weak, and the parents let them die. The fact that a doctor is not called is most significant of their attitude. They take death as it comes, too; it is part of life. And more children succumb in textile than in other districts because the mothers go out to work. This may seem very sad and shocking, but the alternatives are worse. I cannot discuss the subject further here; but I have drawn attention to it in connection with Saxony, because that country presents us with an example of the more natural way of life, which is becoming rare. Nature's way is to produce a large surplus and, by eliminating the weak at the beginning of life and selecting the strong, to make

the race vigorous. Many people think they know a more excellent way but they may be mistaken.

The educational provision in Chemnitz is exceptionally complete even for Saxony, which is pre-eminent in this respect. I will therefore devote some little attention to it.

In 1901 there were twenty-six primary schools (*Volksschulen*), divided into three classes: (1) Lower (*einfache*), (2) middle, (3) higher, (1) and (2) are called *Bezirksschulen*, (3) are *Bürger-schulen*. The schools and scholars were thus distributed:—

Primary Schools.

Class of School.	No. of Schools.	No. of Scholars.	Boys.	Girls.
Lower	16	23,120	10,565	12,555
Middle	7	6,128	3,571	2,557
Higher	3	2,240	1,109	1,131
Totals	26	31,488	15,245	16,243

The proportion of scholars in each class of schools was:—

	Boys.	Girls.	Total.
Lower	69·3 per cent.	77·3 per cent.	73·4 per cent.
Middle	23·4 „	15·7 „	19·4 „
Higher	7·2 „	6·9 „	7·1 „

The total number of classes in the twenty-six schools was 764, of which 692 were in the *Bezirks-schulen* and seventy-two in the higher *Bürger-schulen*. The average size of the classes was: In the lower school, forty-three; in the middle, thirty-nine, and in the higher, thirty-one. The staff numbered 565, thus composed: Headmasters, twenty-seven; teachers (male), 455; teachers (female), nine; assistant teachers (male), sixty-eight; assistant teachers (female), six. There were therefore 550 male to fifteen female teachers; but in addition to the foregoing, instruction in needlework and housework was given by twenty-four female teachers, making a total teaching force of 589.

In Saxony elementary schooling is not free. The regular school fees in Chemnitz are: Lower schools, 4s. 9½d. per annum; middle, 19s. 2½d., 21s. 7d., 25s. 5d., according to the classes; higher 48s. and 60s. Payment, however, is not enforced from very poor parents unable to pay.

All the foregoing schools belong to the Protestant confession, which is overwhelmingly preponderant in Chemnitz. There is, in addition, one Roman Catholic primary school, corresponding with the lower class, having 747 scholars, thirteen teachers and an average of thirty-nine children to a class; school pence, 4s. 9½d. per annum.

Continuation schools are compulsory in Saxony for boys from fourteen to seventeen. In Chemnitz there were in 1901 eight such schools attached to the primary schools, including one connected with the Roman Catholic school. The total number of scholars was 3,429. The fee is 2s. per annum.

For girls special classes are held for instruction in housework, and particularly in cooking; they were attended by 481 scholars.

These, however, form only part of the continuation school provision. There are others of a more technical kind, and scholars attending them are excused from the ordinary continuation schools. They include a general artisan (*Handwerker*) school for lads, a corresponding one for girls and special trade schools conducted by trade guilds, for tailors, druggists, innkeepers and barbers. The instruction given in these schools corresponds pretty closely with that given in a large class of so-called technical schools in England. The number of scholars in the artisan school was 1,630, of whom 1,575 were obligatory students; the number in the girls' school was eighty-five. Fees in the artisan school are 3s. entrance, 8s. a year for two classes and additional fees for each extra class; in the girls' school the fee for a year's course is 18s. "Secondary" education is provided for by a *Real-gymnasium* (semi-classical) and a *Real-schule* (modern).

Then we come to the higher technical and technological education. This includes a textile school (*Höhere Webschule*) for superior students of textile processes, chiefly in weaving, designing and dyeing. It corresponds with those, already mentioned, at Crefeld, Barmen, Aachen and München-Gladbach, and has a very complete practical installation. The number of day students is about sixty. The fee is £13 10s. per annum for Germans and £30 for foreigners. There are also evening classes in technical

draughtsmanship for foremen; the fee is 10s. a year for two hours weekly. In addition there is a very large technological institute of a somewhat special character. It is called *Königliche Gewerbe Akademie und technische Staatslehranstalten*, that is, Royal Trade Academy and State Technical Institutes. The Academy and the Institutes are separate and have different functions, though they are lodged in the same building. The Academy is of the nature of a technical high school or science university; it gives advanced instruction in engineering, architecture and chemistry to young men of superior education, and grants degrees. The course is three and a half years and the fees are £6 per annum for Germans and £16 for foreigners: the number of pupils in 1900 was 404. The Institutes consist of a number of trade schools (*Fach-schulen*), in which theoretical instruction of a lower grade is given in building, engineering, milling, dyeing, and other trades. Conditions of admission are the certificate of a *Volks-schule* and some years of apprenticeship to a trade. The classes are both day and evening. In 1900 the number of pupils was 627, of whom fifty attended the evening classes. The fees range from 10s. to 30s. the half-yearly term.

I have given these details because, of all my selected industrial towns in the three countries, Chemnitz has the most complete educational outfit.

The population of Saxony is overwhelmingly Protestant. The Roman Catholics only amount to 4·7 per cent., though they have greatly increased in recent years, having nearly trebled since 1880. The number of Jews is very small. As is everywhere the case in Germany, illegitimate births and suicides are more numerous than in the Roman Catholic districts. The following figures show this:—

	Illegitimate Births per 100 (1900).	Suicides per 100,000 Inhabitants (1898-1900).
Saxony	12·6	30
Rhineland	4·0	11
Westphalia	2·7	10
German Empire	8·7	20

To prevent erroneous conclusions from being drawn concerning the influence of work and wages on illegitimacy and suicide it should be added that both are lower in the purely industrial towns of Chemnitz and Zwickau than in Dresden and Leipzig.

Saxony returns twenty-three members to the Reichstag. In 1898 eleven were Social Democrats; in 1903 the eleven became twenty-two. Berlin itself is not more solid.

Vital Statistics of Saxon Towns, 1901.

	Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under One Year per 1,000 Births.
Leipzig . . .	462,675	33·0	18·6	14·4	236
Dresden . . .	404,773	32·2	17·8	14·4	190
Chemnitz . .	210,004	39·5	23·8	15·7	331
Plauen . . .	75,605	39·6	17·5	22·1	198
Zwickau . . .	56,465	34·4	22·5	11·9	271
Löbtau . . .	35,522	44·8	19·6	25·2	280
Meissen . . .	31,976	31·9	19·3	12·6	225
Zittau . . .	31,247	25·5	17·4	8·1	196
Freiberg . . .	30,279	26·6	19·3	7·3	220
Bautzen . . .	26,297	26·9	16·2	10·7	158
Glauchau . .	25,766	30·1	22·9	7·2	333
Reichenbach . .	24,509	37·7	23·3	14·4	333
Meerane . . .	23,941	39·1	23·9	15·2	306

The most striking thing in these columns is the enormously high infantile death-rate, particularly in the textile towns. The low birth-rate in three of the towns is probably due to some peculiarity in the constitution of the population, caused by the presence of some large institution containing unmarried or old people, such as barracks or an asylum. In small towns these are a seriously disturbing factor which must be taken into account both for birth-rates and death-rates; but, of course, they have no bearing on the infantile mortality reckoned in relation to the births.

Note.—I have omitted statistics of the number of persons employed in particular industries in the German towns, such as I give for the English and American ones, because the date of the last German occupational census (1895) is so much earlier than the dates of the others that the figures, if used for comparison, would be somewhat misleading.

CHAPTER IV

INDUSTRIAL DISTRICTS IN AMERICA.[1]

MANUFACTURES are very widely distributed in the United States and the distribution is constantly becoming wider. In 1850 the New England States (Massachusetts, Rhode Island, Connecticut, New Hampshire, Maine and Vermont) represented 27·8 per cent., and the Middle States (chiefly New York, New Jersey and Pennsylvania) 46·4 per cent. of the total products. Together these two eastern groups or areas contained three-fourths of the industrial strength of the Republic. In 1900 the share of the New England States had sunk to 14·4 per cent., and that of the Middle States to 38·9 per cent.: together they represented little more than half the total. This change is not due to any decline on their part, but to the development of other areas —to wit, the Central States (chiefly Ohio, Indiana, Illinois and Missouri) from 14·3 per cent. to 30·7 per cent., and the Western States (the Rocky Mountains group) from 0·1 per cent. to 4·3 per cent. There has also been a marked industrial expansion during the last thirty years in the Southern States and those on the Pacific seaboard, but neither group has yet quite regained the relative position which it held in 1860 previous to the war. The general movement is westward; and its strength may be gauged by the fact that even the Central States, which are the seat of the most active increase and are often spoken of as "the real America," lost ground relatively between 1890 and 1900. Their products fell from 31·4 to 30·7 per cent. of the whole. The centre of manufactures has shifted steadily

[1] The word "town" is used in this chapter and throughout the book in the English sense. In the United States it has a different meaning; the equivalent American term is "city".

from East to West with the centre of population, which in 1790 stood in Baltimore, and in 1900 in the middle of Indiana. Similarly the centre of manufactures, which in 1850 stood somewhere about the middle of Pennsylvania, had by 1900 shifted west of Pittsburg into Ohio.

It is necessary to bear this movement in mind in order to grasp the course of industrial development in the States. But for the study of industrial conditions in the actual present, the Eastern States are still the most instructive ground. Both relatively and absolutely the largest and most important units are on this side. New York and Pennsylvania still head the list as absolutely the largest producers, while Rhode Island, Connecticut, Massachusetts and New Jersey come first as producers *per capita* of the population. They must therefore be reckoned the most purely industrial of the States. Illinois comes third absolutely, but only eighth relatively to the population. It is, therefore, in a comparatively small area in the North-east that we find conditions most nearly comparable with those in the industrial districts of Europe. No doubt the chief reason for this concentration is mere priority in time; manufactures were first started in this area, because it was settled and developed earlier than the inland country to the West. This was due to its position at or near the Atlantic sea-board; and for the same reason it absorbed the bulk of the European immigrants until the opening up of the interior. After that other natural advantages began to tell, as we see from the striking case of Illinois. In 1840 it ranked sixteenth, in 1860 it had sprung to the eighth and in 1890 to the third place.

In considering the chief seats of manufacture in England and Germany we have seen that most of them have an industrial history going back for several centuries, that their position has been determined by the possession of certain natural advantages, and that to this must be added the traditional skill of the native population, which tends to keep an industry in a locality where it has once been firmly established, although its nature may undergo considerable changes, incident upon new inventions, new materials and new fashions. These observations cannot be applied to America without a good deal of modification. Although it

appears from Hamilton's famous *Report on Manufactures* in 1791 that numerous industries were carried on at that time, and although there is evidence that they increased in the early part of the nineteenth century, nevertheless the occupation of the people remained chiefly agricultural, and their wants were supplied to a very great extent by goods imported from Europe and paid for by agricultural produce. Consequently the traditional skill perforce acquired by older countries through the necessity of providing for their own wants in more primitive times has never existed in America on any considerable scale. The people have always been able to get what they lacked from Europe. This entailed the disadvantage of not possessing a stock of industrial skill commensurate with the population, but that was also gradually remedied in the simplest way; the skill was imported too, and the importation is still going on. It was not a complete remedy, but it served; and in the present day the wide-spread changes in processes of manufacture render skill less and less necessary in many branches of industry. These changes have been chiefly effected in recent years by American inventiveness, and necessity has been the stimulus. They are all of a labour-saving nature, because labour was the thing most lacking. One result is the evolution of a distinctively American style or quality in manufactures, but that is not the point I wish to notice here. The absence of traditional skill, more or less confined to particular localities, has had the advantage of giving greater freedom of movement to manufacturing enterprise and enabling it to go where other conditions were most favourable to its development. Hence the spreading movement noted above. It has had the further advantage of relieving manufactures of the drag of conservatism in method.

The last is one of the advantages enumerated in the United States Census as accounting for the rapid rise of the States to the first position among manufacturing nations.[1] The following five causes are laid down:—

(1) Agricultural resources.

[1] This claim is based on Mulhall's estimates of the yearly value of manufactured products in the chief industrial countries, *Twelfth Census, U.S.A.*, vol. vii. p. 55.

(2) Mineral resources.
(3) Highly developed transportation facilities.
(4) Freedom of trade between States and territories.
(5) Freedom from inherited and over-conservative ideas.

The agricultural resources include both food supplies and raw materials for manufactures. Both, says the Census are cheaper, more abundant and more varied than in any other manufacturing country, adding that "in many localities the character of the manufactures has been determined largely by climatic conditions and by the character of products to which the soil of such localities is especially adapted". The development of cotton manufacture in the Southern States is a salient example. With regard to minerals, the compilers have no difficulty in showing that more coal, iron ore and copper ore is mined in the States than in any other country. The local distribution of coal and iron accounts for the shifting of the iron and steel centres from Eastern Pennsylvania to Western Pennsylvania, Ohio and still further West. Of the transportation facilities the most remarkable is the inland navigation, and notably the chain of great lakes, which are unique. They provide a waterway 1,000 miles in length from Rochester to Duluth; in 1899 the ton mileage on this route was equal to two-fifths of the whole of the railway systems. Its influence is seen in the fact that the first, second, third, fifth, eighth, ninth and tenth manufacturing States—namely, New York, Pennsylvania, Illinois, Ohio, Indiana, Wisconsin and Michigan, forming a great industrial belt only equalled by the belt along the north-east Atlantic coast—all lie upon this waterway. In addition there are over 18,000 miles of navigable rivers. The railroad mileage exceeds that of the whole of Europe, and "the transportation of freight by rail is cheaper than in any other country". Finally, freedom of inter-State trade assures a larger free market than is enjoyed by any other trading industrial country; and absence of tradition, already mentioned, permits the free play of novelty and enterprise.

These statements are open to some criticism, but it is not my purpose to criticise them here. I give them as the authoritative utterance of the United States Government on the industrial position of the country, and as the best

informed explanation of some of its features. But I cannot refrain, in passing, from dropping the query: Why, with all these superior advantages, is it necessary to place, not merely a prohibitive tax, but any tax at all upon the products of other countries in order to prevent them from competing successfully with home products? This is not a gibe or a challenge to the discussion of tariffs, but a very sober question which an international comparison of industrial conditions cannot ignore. As several English manufacturers have said to me, "If the Americans are so superior, why is it necessary for them to put on a tariff of 100 per cent. in order to keep me out? I can, and did, beat their heads off against a 50 per cent. tariff; against one of 100 or 120 per cent. I cannot compete; but what I want to know is: Where does the superiority come in?" I have repeatedly asked this question in the United States and could get no answer. There is no valid answer. And the difficulty of finding one is enhanced by the recital of the natural advantages of the United States quoted above.

Massachusetts.

I have said that certain of the New England States furnish the most purely industrial areas in America. They stand first both in the proportion of wage-earners employed in manufactures to the total population, and in the value of products *per capita*. Of these States Massachusetts is the largest and most important. Rhode Island and Connecticut, though surpassing it in these respects and therefore relatively first, are actually so small that they only occupy the fifteenth and eleventh places respectively in the list of States arranged according to absolute industrial capacity or occupation, whereas Massachusetts is fourth, being only surpassed by New York, Pennsylvania and Illinois. Massachusetts has another claim to distinction in being the earliest developed of manufacturing States; in 1810 it stood first, and down to 1850 it was only second to New York. The promotion of home industries in this State appears to have been pursued with energy from an early period before the Declaration of Independence. In 1767 a resolution was passed at Boston for-

bidding the purchase from abroad of a number of articles, including various textiles; and in 1780 an association was formed at Worcester for making cloth. Checked by the law forbidding the export of machinery from England, Massachusetts was stimulated to further exertions, and in 1786 gave a grant to Thomas Somers and Robert and Alexander Barr—the first an Englishman, the two latter Scotchmen—to enable them to make and erect cotton spinning machinery. The first cotton mill built in America was put up at Beverly in Massachusetts in 1788; but, so far as I can ascertain, the first to be set to work was at Pawtucket, Rhode Island, in 1790. Progress was very slow at first, and by 1808 only fifteen mills had been erected; but the leading position in the manufacture of cotton and of cotton machinery thus early secured by these States has been maintained ever since. A marked impetus to both was given by the construction in 1814 of a power loom by F. C. Lowell, of Boston, who had studied the mechanism in Britain very much as Fulton did in the case of the steam-boat. Again, in the manufacture of woollen goods, which goes back to a much earlier date than that of cotton, Massachusetts was first in time and is still first in position; and the same may be said of worsteds, which came much later. But perhaps a still more striking instance of early prominence successfully maintained is furnished by the boot and shoe trade. It has been traced back to 1635, when two shoemakers settled in Lynn. That town is still the second greatest centre of the industry and is only surpassed by Brockton, another Massachusetts town. No branch of manufacture has been so completely Americanised or modified by American methods as this; in none has a greater revolution in cheap and rapid production by characteristically American labour saving machinery been effected. And the scene has been Massachusetts. In 1818 pegs were invented as a substitute for sewing; in 1851 machinery was applied to pegging and afterwards to other processes, culminating in the sole-sewing machine, which was perfected in 1861. Hardware and paper are other leading products, the manufacture of which goes back to an early date.

In the retention of its old industries New England illustrates their tendency to stick to a locality in which they have once been firmly implanted and provides an exception to the mobile distribution generally observed in America. The only natural advantage enjoyed by these States in addition to proximity to the Atlantic sea-board, is water-power, which undoubtedly determined the position of some of the leading industrial towns. Lowell, Lawrence and Fall River, in Massachusetts are prominent instances. These are all textile towns and of a purely industrial character, and I propose to take them as examples for comparison with those elsewhere. But a few industrial statistics for the whole State and some observations on the capital will fitly come first.

The population of Massachusetts in 1900 was 2,805,346, and of this number 497,448, or 17·7 per cent., were "wage-earners engaged in manufactures". The term includes some hand trades, Government establishments and small workshops. If these be excluded the number of wage-earners in manufactures was about 445,000. One-third of the total is engaged in textiles, which form by far the largest branch of manufactures in the State: and of the textiles cotton comes first with upwards of 90,000 persons employed, wool and worsted second with 36,000, hosiery third with less than 7,000. Next to cotton, however, the industry employing the largest number of hands is the manufacture of boots and shoes, in which upwards of 58,000 persons were engaged in 1900; but these figures represent a considerable fall in numbers since 1890, when over 67,000 persons were engaged in the trade. As is always the case in an expanding textile district, machinery is a prominent and growing branch of manufacture. In 1900 it employed over 32,000 men, representing an increase of some 35 per cent. over 1890. The rest of the industrial population is pretty equally distributed over a number of manufactures. The density of population is almost identical with that of England. There are no coal mines in the State, but a good deal of water-power is obtained from the Connecticut, Merrimac and other rivers. The early development of the textile industries was largely due to this natural advantage, which was utilised in several places by means of an exten-

sive system of canals and dams erected at great cost and still maintained, though the increasing use of coal and steam-power has rendered it less important than formerly. Of the total horse-power used in manufactures, between one-fourth and one-fifth is obtained from water.

Boston.

A very striking fact about this great manufacturing State is that not only coal but nearly all raw materials have to be brought from a distance. The maintenance of the local industries, therefore, has necessitated the development of transport facilities to keep pace with requirements. Hence the importance of Boston, which is the centre of the traffic by sea and land not only for Massachusetts but for neighbouring New England States. A very erroneous impression about Boston has become current in Europe, chiefly through the ironical jests hurled at the "hub of the universe" by Americans themselves. It is represented as being wrapped in a mantle of intellectual superiority and removed from the bustle of the business world—a sort of Oxford, in short. There is a certain amount of truth in the picture, but not very much. Boston is not so exclusively given up to business as most of the large American towns; intellectual pursuits are more prominent and more prized there than elsewhere, though they are not absent from New York and Philadelphia, for instance. It has a tradition of refinement and culture—somewhat self-conscious perhaps—not found elsewhere and largely due to the presence of Harvard University which is socially, though not politically, in Boston. But for all that it is, first and foremost, a great trading place. It resembles Manchester much more nearly than Oxford. Boston is, in fact, to New England what Liverpool and Manchester together are to Lancashire. It is the chief port, the great railway centre and the market in one. The heads of manufacturing businesses in Massachusetts are not at the mills in Lowell or Lawrence or Fall River, but at the offices in Boston. It is a busy bustling town. The heart of it, which lies in a rounded peninsula projecting into the harbour, is fully as busy and bustling as any part of New York, Chicago or Philadelphia. The

streets are not less thronged, the heavy traffic quite as conspicuous, the electric cars equally crowded, numerous and fast. And a proof of the predominant character of Boston is the fact that the most noteworthy building in the place is not the public library, nor Trinity Church, nor the Technological Institute, though these are noteworthy; nor is it the State House, which is not; nor even Harvard University; but the great railway station, which is said, and so far as I know with truth, to be the largest in the world. It has not the architectural merit and dignity of the newer railway stations in Germany, such as those at Cologne and Dresden, but it is immense. I believe it is fitted with a vast number of ingenious devices for facilitating the train service, but its size makes it inconvenient to passengers. This colossal structure is the terminus for the lines running south and west. There is another very large station for other lines and several smaller ones; in short, Boston is the central point or ganglion of a great plexus of railways, which converge upon the port and proclaim it the business heart of New England.

In point of situation Boston resembles New York in that its centre is compressed into a narrow peninsula, from which expansion has only been possible in most directions by crossing the water which almost encompasses it. This old part of Boston bears more resemblance to an old European town than any other in the States. It is very congested, the streets are for the most part narrow and extremely irregular, running in all directions. For all that the thronged traffic and bustle, the big warehouses and fine shops give a great impression of power and wealth. Slums, of course, go with this character; there are many dark and sinister-looking spots in which signs of the seamy side of life abound. But that is not the mark of Boston; it has nothing like the proportion of squalor to be seen in English towns of equal size and similar character. On the other hand, the presence of a large and wealthy residential population is abundantly evident. Without any pretensions to beauty or harmony—things unknown to American street architecture—the best residential streets are good and pleasant to look upon. They have an air of self-respect, if not of distinction, and are free from that shabby and

unkempt appearance which is the hall-mark of American towns and not less characteristic than a mean and dingy appearance is of English ones. With the exception of Philadelphia and Washington, which is an exotic and only American in the shabbiness of its fringe, Boston is the most finished of American cities. The streets are for the most part well paved and well kept, in striking contrast with those of New York. Churches and buildings devoted to literature, science and art are numerous. The public library is the finest I have seen in any provincial town. It is the largest in the United States next to the Congress Library at Washington, and as a building possesses undeniable distinction. Unlike most of the American public libraries it has a newspaper room, and the mechanical system of supplying readers with books is characteristically ingenious. The Institute of Technology also is worthy of the capital of a great manufacturing state. It is the oldest and most famous establishment devoted to technical education in America, apart from agriculture, and has been compared with the Technical High School at Charlottenburg, not very happily. The great Berlin University of industrial science is materially a far more imposing affair and educationally its functions differ. The Boston Institute covers a much wider field, including languages, history, economics, geology, biology and other things that have nothing to do with industrial science; the Berlin courses are more highly specialised and scientifically more advanced. The Massachusetts school bears more affinity to some of the minor German high schools or the new technical school at Manchester, which has indeed been to a large extent modelled upon it. These points, however, would be more properly discussed in connection with education than in the present section. The number of students engaged in various branches of engineering in 1900-01 was 294.

I have perhaps said enough to give some idea of the commercial centre of the New England States. On the whole a fine town, not equal to Hamburg, which it closely resembles in size, situation and character, but superior to Liverpool, Manchester or Glasgow, over which it has the great advantage, common to all American towns on the eastern side of the Allegheny coal-fields, of a smokeless

atmosphere due to the use of anthracite coal. It ranks fifth among American cities. The population in 1900 was 560,892, of which 35·1 per cent. were foreign born and 2·1 per cent. negro. As regards the principal countries of origin the foreign born population was thus distributed in thousands (round numbers): Irish, 70; Canadians, 50; other British, 18; Russians, 15; Italians, 14; Germans, 10½; Scandinavians, 7; Poles, 4. The death-rate (1900) was returned at 20·1 per 1,000, and since registration is very fairly complete the figure may be accepted. Boston is not a manufacturing town. There are some foundries and engineering shops, as there must be in a great port, and all the usual handicrafts, but no industries on a large scale. Though a comparatively old town for America Boston has only been a municipality for about eighty years, having been incorporated in 1822, when the population was 45,000; but the first church was built by settlers in 1632. The place is still growing rapidly; the increase of population in the last decade was over 25 per cent.

The Cotton Towns.

In spite of the rapid growth of the cotton manufacturing industry in the South, Massachusetts is still by far the greatest of the cotton States. In 1900 the total number of spindles in the United States was 19,000,000 and of looms 450,000. They are very widely distributed, but Massachusetts owns upwards of 7¾ millions of the one and 176,000 of the other. No other State had a fourth of the number. The first three cotton towns of America are all in Massachusetts: they are Fall River, Lowell and New Bedford. These are all purely industrial towns and may fairly be compared with Bolton, Oldham and Blackburn. The difference, however, is very great. Massachusetts bears no external resemblance to Lancashire. The latter is stern and hard, grimy with coal and iron: the mill towns stretch out from Manchester in continuous lines; chimneys, coal-shafts and heaps of refuse dot the way; the very sight of it seems to bring the clang of hammers and the whirr of machinery to the ear. Massachusetts is rural, pleasant, rather pretty and tame; the factory towns are dotted about with miles

of peaceful country between; when you come up to them they are quiet; there are no coal-pits, no big ironworks, and there is no grime. The chief reason for this difference is the absence of coal and of smoke; but in addition the New England cotton towns are very considerably smaller and younger than their Lancashire rivals. They also differ greatly in many other respects. They represent a certain type which does not exist in England; it stands half-way between the primitive and the advanced American type. The primitive type consists of detached wooden buildings erected along roads which run for the most part at right angles and are bordered by trees. There is abundant space, and only in the centre of the place do the buildings form a continuous street. Here they begin to change from wood to masonry. As the place grows in population and wealth this change extends until eventually the complete city is evolved with permanent buildings and regular streets, only differing from the European type in the geometrical arrangement and the architectural anarchy which permits a building of twenty stories to be placed alongside one of two. The material is brick or stone as elsewhere, at least externally, for the most modern buildings are constructed of steel and concrete with merely a facing of stone. They are built up from the inside without scaffolding, which permits of their being raised to an indefinite height. Hence the characteristic "sky-scrapers". We hear so much of them and of the marble palaces built by millionaires that an erroneous impression is formed of American towns. The sky-scrapers are not numerous; there are less than a score in New York, and not nearly so many anywhere else; only two or three in Philadelphia and Pittsburg, none at all in Boston or Washington and other important places; and they are mainly used for offices. The really characteristic feature of American towns is still the wooden house. Even in great cities it is found on the outskirts, and elsewhere it is all-prevalent. It is to the sky-scraper and the marble palace what the tramp is to the colossal liner. The latter takes the eye and causes a great deal of talk, but the former carries the commerce of the world. The towns we are considering come half-way in the evolutionary scale; their main thoroughfares are formed of continuous buildings con-

structed of masonry, but outside these a large part of the population is still housed in wood. Such houses are not cottages, and as a rule it can hardly be said that the urban American's house is his castle. More often than not he has not got it to himself. Flat life is not so universal as in German towns, and streets of small single houses adapted to working class families are not unknown; I shall have to mention them in speaking of Philadelphia. But large industrial towns of the English type, consisting entirely of workmen's cottages, do not exist. In general the houses are of considerable size and occupied by several families, and as single men are relatively very numerous boarding is common.

Fall River.

These remarks are well illustrated by Fall River, the largest of American cotton towns. The localisation of the industry here is no doubt due to the presence of water-power and of a harbour. Fall River lies on the coast of Massachusetts some forty miles to the south of Boston. It is one of a group of manufacturing towns which make this corner of New England an industrial district second to none in the States. Hard by are New Bedford, Providence, Taunton, Brockton, and other smaller places. Research has failed to elicit any historical details of interest. The manufacture of cotton in America is hardly a century old, and the entire history of many seats of the industry falls well within that period. A company bearing the name of Fall River was formed in 1820 for making cotton cloth, but probably the place was used as a port before the industrial era. It is still an important terminus for the popular sea-route from New York to Boston, which carries an immense passenger traffic and is greatly preferred to the railway in the warmer months of the year. But it is only used by travellers as a changing station. The huge paddle-boats, which carry pretty nearly 1,000 people, leaving New York the evening before, arrive early in the morning, and before breakfast all the passengers have vanished. No one stops: there is nothing to see except the mills. The town, which has a population of 104,863 (1900), lies irregularly extended on high ground overlook-

ing the harbour and the mills, which are grouped about it down below. A straggling, untidy place, it is no whit more attractive than any of the Lancashire towns. If on the one hand it has a less dingy, brighter and more cheerful aspect, on the other the ragged, shambling streets, ill laid and ill kept, the profusion of shabby buildings and the entire absence of dignity fully neutralise that advantage. Yet there are some good and substantial buildings, both public and private. The mills are the most noteworthy and well worth attention. There are about eighty of them and they represent upwards of 3,000,000 spindles and 79,000 looms. Two of the mills spin only, six are printing and bleaching works, the rest both spin and weave, as is usual in America. Their most striking feature is the great size of the larger concerns. The Fall River Ironworks Company, which is the largest, has 380,000 spindles and nearly 11,000 looms, not all, of course, under one roof; the Durfee mills have 134,000 spindles and 3,500 looms; and the Merchants Manufacturing Company is not far behind with 131,000 spindles and 3,250 looms. This will show the scale on which these concerns operate. Confining themselves as they do to comparatively few classes of goods, they are able to produce large quantities at an advantage. The Ironworks mills, for instance, only spin low counts—18's and 36's—and make one kind of print cloth; and they have their own bleaching and printing works. But there is a tendency to advance from lower to higher grades, probably caused by the competition of the Southern States, and some mills are said to spin up to 150 counts. The larger ones are very fine, built of stone, and the rooms are light and airy. In the Ironworks spinning rooms I saw a quantity of new machinery, all from Platts, of Oldham; the looms were American. The more skilled hands are chiefly British, the less skilled of various nationalities but principally French-Canadians, who form by far the largest section of the foreign-born population. The total number of hands employed in 1900 was 27,603, of whom 13,568 were men, 12,366 women, and 1,669 children under sixteen. The men are fairly well organised, the mule-spinners in particular. In fact they are as highly organised as in Lancashire, which is not surprising as most of them come

from there. From 85 to 90 per cent. of the mule-spinners throughout New England belong to the union, and Fall River is their headquarters. There every man belongs. They have fixed price-lists, arranged with the owners, as in England, and a certain machinery for settling disputes though less complete than in Lancashire. The trade union secretary is generally able to settle an incipient dispute direct with the individual owners, who are very accessible. Changes in the price-list are settled by a joint conference. The average earnings of mule spinners are £2 18s. a week, and the highest £4. The week is fifty-eight hours. Card-room hands earn from 43s. to 50s. a week. Considering the longer hours, higher rents and greater cost of living, the advantage over Lancashire is not great; and the verdict of a leading trade unionist who knew both countries, was: "A competent man had better stop at home."[1] Housing varies. Wooden tenement houses, such as I have mentioned above, are numerous. They are large houses of three or four floors and they accommodate from four to six families as a rule. Rents run from 2s. to 3s. a week for a room A tenement of four rooms and a kitchen costs from 10s. to 12s. a week. But there are also smaller houses, and a good many operatives own, or nominally own, their houses through the assistance of building societies. In 1900 there were 21,027 families living in 9,509 dwellings and an average of eleven persons to each dwelling. One great advantage these medium towns possess over the larger American cities and the older English towns is the absence of congestion and of slums. There is ample room and the buildings are spread out over plenty of ground. The absence of squalid dwellings unfit for habitation is noticeable. On the other hand the parks and playgrounds are distinctly inferior to those in most industrial towns in England; but this must be attributed largely to climate; there is not the same verdure in America. Sanitation in general is inferior, and typhoid fever in particular is excessively prevalent. Perhaps it would be more correct to say has been excessively prevalent, because a marked improvement in several towns

[1] In January, 1905, the operatives accepted a reduction of 12½ per cent. after a strike lasting six months.

has been effected in recent years mainly through attention to the water supplies, which are generally very inferior in the United States. The quantity is often unlimited, but at the sacrifice of quality. Good quality is very rarely compatible with unlimited quantity because pure water costs money, and those who point to the enormous domestic consumption of water in the United States omit to mention the equally enormous prevalence of water-borne disease.

I shall have more to say on this head in speaking of the town of Lowell, but I may mention here another cause of typhoid fever—namely, the consumption of oysters from contaminated layings. Oysters are very cheap in America and everybody eats them; to many they are a daily article of diet. Probably the bulk of them are harmless, but the public is deceived in thinking that they are all so. This is a common delusion. American friends have said to me: "At any rate our oysters are safe; there is no fear of getting typhoid fever from them, as in England". As a matter of fact it was in the State of Connecticut that oyster-borne typhoid was first conclusively demonstrated in the year 1894, and there is far more contamination of oyster beds along the coast of New England than of England; but the subject has not been so much investigated and talked about. Professor Sedgwick, of the Massachusetts Institute of Technology, speaking of oyster-borne typhoid, says:—

"No extensive investigation of this subject has as yet been made in the United States, but there is good reason to suspect that if such examination should be made, it would reveal, in many cases, the existence of insanitary conditions in connection with the oyster industry."[1]

I can bear that out from my own observation for I have seen oysters and other shell fish being dredged up in one of the harbours along this coast, into which open sewers were discharging at no great distance. The whole question is interesting as an illustration of the ill-founded complacency which is so common in the States.

Another preventable disease excessively prevalent is diphtheria. In consequence of the great differences in age

[1] *Principles of Sanitary Science and Public Health*, by William T. Sedgwick, Ph.D., 1902, p. 308.

constitution of the popu'ation, due to the large proportion of young adult immigrants in American towns, a comparison of the death-rates in them and in corresponding English ones ought always to be used with a certain reservation as the measure of relative healthiness, even if the American vital statistics were equally complete, which is not the case. But taking them as they stand they show that there is something wrong with these New England cotton towns. Fall River, for instance, ought to have a very low death-rate, certainly not more than 15 per 1,000. It has many advantages. The situation is particularly good. High ground and a rocky formation, with a good fall to carry off rain or sewage, and consequently dry soil, abundant space, air and sunlight are the very conditions that conduce most to health. Add to them absence of old slums and rookeries and a population containing an abnormal proportion in the prime of life, working moderate hours and in receipt of high wages (in Fall River municipal labourers get 8s. a day for eight hours' work). Here are something like model conditions; yet the death-rate was over 20 per 1,000 in 1901, and that was lower than in previous years. In the same year the death-rates in Bolton, Oldham and Blackburn were 18·2, 19·6 and 19·5 respectively. And Fall River does not stand alone; the rates in Lowell and New Bedford were equally high or higher. The sanitary data published with regard to these towns are too incomplete to enable one to trace their unhealthiness to its proper causes, but my belief is that it is mainly due to antiquated and inefficient sanitation in general, bad water supply and defective means of dealing with infectious diseases. The chief causes of death in Fall River in 1901 were diarrhœa and enteritis, consumption, pneumonia and bronchitis. It must not be inferred that the New England towns compare unfavourably with others in America. On the contrary, so far as can be judged from the very inadequate information available, the mortality is equally high or higher in other industrial centres. But registration is carried out in such an imperfect manner that the subject cannot be handled with any confidence.

Of the population of Fall River nearly one-half is foreign-born (50,042 out of 104,458). The principal coun-

tries of origin are Canada (22,500), Great Britain (13,400), Ireland (7,300) and Russia (1,000). The Canadians are chiefly French from the province of Quebec; they come for employment in the cotton mills and are unskilled. With the Irish they form a large Roman Catholic element in the town. There are sixteen Roman Catholic churches, nine schools and two orphan homes. This illustrates the steadfast policy of the Roman Catholic community in maintaining its religious influence; it has taken the leading part in that development of private schools, which seems to be accompanying the disappearance of religious teaching in the public schools. They educate 70,000 children in the state of Massachusetts, but a large number of the scholars attend the public schools in addition. Of the latter there are at Fall River: primary, thirty-one; intermediate, twenty-seven; mixed, eight; grammar, thirteen; with one high school.

Fall River has a good public library, founded more than forty years ago. In 1901 it contained 61,561 volumes with a home circulation of 158,289, distributed among 11,767 card-holders. The reference library and reading-room, which contains newspapers, are open on most Sundays. The number of readers is not stated in the report, but "the demand for standard reference works" is large. In the circulating library "fiction, of course, still largely predominates, but the demand for the better class of such books increases".

The town has by this time a textile school for teaching the local industry, but at the date of my visit the building, to which the municipality had given £5,000, was unfinished.

Fall River is connected by rail with Providence, New Bedford and Taunton. The facilities for locomotion are very complete, for in addition to the railways, electric road cars run between these towns and there is also an electric railway between Fall River and Providence. The electric trams in the town are not owned by the municipality, nor does it deal in electric light or gas. Municipal trading is very little developed in America, nor does it appear to be regarded with much favour. Otherwise the functions undertaken by the local public authority are

much the same as in England. It has the care of streets, public buildings, parks, cemeteries, public lighting, water supply (usually), sanitation, fire prevention, police administration. With regard to education and pauperism the system varies in different states and towns. At Fall River both the public schools and poor-law relief are administered by the city. The expenditure on the latter in 1901 was £25,736 or about 4s. 9d. per head of the population; but this amount includes expenditure on hospitals, dispensaries and the insane.

Vital Statistics of Fall River, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
107,000	37·8	20·1	17·7	185

The comparatively high birth-rate is due to the large proportion of foreign-born residents, particularly French-Canadians. Out of a total number of 4,054 children born, only 586 were the offspring of wholly native-born parents, whereas 2,712 were the offspring of foreign-born parents and 752 of mixed parentage; 4 were unknown. These facts illustrate the dependence of the New England States on foreign blood for the maintenance of population. The birth-rate for the whole State of Massachusetts in 1901 was 25·07 per 1,000. The infantile mortality is very high at Fall River, higher than in most of the corresponding Lancashire towns.

Miscellaneous Statistics.

Police Force.	Liquor Licences.		Arrests for Drunkenness.
129	104		2,250
Places of Worship.	Theatres.	Newspapers.	Public Library.
68	4	7	1

The number of liquor licences is limited by law to 1 in 1,000 of the population. Of the persons arrested for drunkenness 62·18 per cent. were of foreign birth. The theatres include one theatre proper and three music halls, mostly very small. Of the newspapers three are daily and four weekly; two are in French.

Lowell.

Lowell is a nice town and a favourable example of its class. It lies twenty-six miles north of Boston on the banks of the Merrimac, which here reminds one of the river at Ottawa, though the surroundings are less romantic. It is a fine stream rushing in a rocky bed. The head of water furnished by a series of falls at this spot explains the selection of the site for a factory in the early days of the cotton industry. It was in 1823 that Francis Lowell, of Boston, who made the first power-loom in America, came out to the Merrimac to build a mill and so founded the town which bears his name. Such is the origin of many an industrial centre in the United States, and the process is going on to-day. Lowell now has a population of 94,969 (1900), of whom 31,582 are engaged in "manufacturing and mechanical pursuits". That is to say, it is a purely industrial town. The staple manufactures are cotton and hosiery, but there is also a celebrated woollen mill and some machinery works. The number of persons employed in cotton mills in 1900 was 13,742, of whom 6,300 were men, 6,798 women and 644 children under sixteen. It is therefore a long way behind Fall River, but it ranks as the second cotton town in America. The number employed in hosiery was 4,165; in woollen and worsted goods, 2,496; and in "foundry and machine shop products," 2,938. The proportion of foreign-born inhabitants was 43·1 per cent. Canadians (chiefly French), numbered 19,159; Irish, 12,147; English, 4,446; and next to these the largest contingent of any other nationality was furnished by 1,203 Greeks. There were also in appreciable numbers Swedes, Austrians, Portuguese, Poles and Russians. All these find employment in the mills, and a very mixed company they make. I had an unusual opportunity of reviewing them as they were paraded for a great strike procession. They were marshalled by nationalities with a very curious effect. The different types, cheek by jowl, stood out in vivid contrast —the French, the familiar English, the Celtic, the Scandinavian, the Slav, the small Portuguese and the swarthy Greek. Such a sight can be seen nowhere else. It brought

before my eyes in one living picture the amazing cosmopolitanism of American labour, and made me think with a smile of that convenient abstraction but almost mythical person of whom we have heard so much—the "average American workman". In truth the average American workman in the chief industrial States is almost anything you please except American or except a workman, and all the arguments drawn from his supposed education and training are built upon a delusion. The average American workman is really a clerk. The mixture of nationalities enormously complicates the question of organisation and its effects. Very few of the continental Europeans speak English or have experience of trade unions, but they seem to understand a strike well enough. They all turned out on that occasion to a man, and did their share of parading with enthusiasm. The women were all there too, being chiefly Canadian, Irish and English. It was an interesting occasion.

This strike prevented me from seeing the Lowell cotton mills at work, for every one was closed; but it threw light upon them, notwithstanding, and upon other matters. The cause was the demand, originally on the part of the loom-fixers, for a 10 per cent. rise in wages, based on the ground that they were paid lower rates than elsewhere, and in particular at Fall River. The following rates of wages were given to me by a man who was neither employer nor employed, nor in any way connected with the dispute, but who had an intimate knowledge of the facts. Average weekly earnings: Mule spinners, 50s.; fixers, 48s. to 52s.; weavers 28s.; card-room hands, 24s.; ring-spinners, 24s.; overseers, £3 12s. to £4 16s.; second hands, £2 8s. to £3 4s. These rates are considerably below those in force at Fall River and New Bedford, and not much higher than in Lancashire. If the difference in hours and cost of living be taken into account, they are lower. The employers refused the rise demanded, the Textile Council took up the cause of the men and all hands came out to the number of some 13,000. The matter was referred to the State Board of Arbitration, and I had the good fortune to be present at one of the hearings. It was an instructive experience. The strikers were represented by counsel. The court first spent an hour over the question of sitting. The men were going to have a proces-

sion that day and the leaders wished to be present; they therefore asked for an adjournment. The other side were quite willing to meet them, and eventually, after wasting an hour, the court decided to adjourn from twelve to three for the convenience of the leaders. Their counsel then proceeded with the case, and cross-examined some of the owners. The plea of the latter was that they could not afford to give the same wages as at Fall River because their plant was antiquated. Counsel for the operatives did not challenge the fact but rather accepted it and put the blame on the employers. He laboured away at an open door with wearisome iteration, and, when the time came to adjourn, had elicited nothing but what was granted at the start. The waste of time and the licence permitted were flagrant. No member of the court uttered a single word; they let him run on. I spoke of the waste of time to an American gentleman, who explained that the court dared not stop him, or they would be accused of partiality. I was painfully impressed by the unreality and weakness of the proceedings. After sitting for a week the arbitrators inspected the mills and reported that with one exception they could not afford to pay the wages demanded. Still the hands remained out; but after two months the mills were re-opened at the old rates, and most of the strikers went back to work. After another three weeks, the strike, which had tasted twelve weeks, was officially declared at an end.

After this it is hardly necessary to say much about the Lowell cotton mills. The elaborate system of canals which was built to supply them with water-power is still maintained, though the cost of maintenance is said to counterbalance the economic advantage over coal, which is also used. In the present day it would be cheaper to use coal than to reconstruct the water system. More noteworthy than the cotton mills is the large carpet-weaving concern, which bears the name of Bigelow. The establishment of this industry in Lowell dates from 1828, when some of the carpet looms made by Erastus Bigelow were set up in one of the cotton mills. Carpet weaving in the United States was first carried on in Philadelphia, which is still by far the greatest centre of the industry, but the looms of Bigelow brought Massachusetts to the front with the making of ingrain carpets.

At present the Bigelow mills employ about 2,000 hands, and make most kinds of carpets from start to finish. They spin and dye the yarn as well as weave. The weavers, male and female, are chiefly British and principally from Kidderminster and Halifax. The female weavers that I saw here were a noticeably fine upstanding set of women; they are employed chiefly on Axminsters; Wilton and ingrain carpets are woven by men. One of these, to whom I spoke, was earning £2 16s. a week. These are good mills but not equal to Crossley's at Halifax; some of the sheds are excessively dark, a very common and a very serious fault in American weaving sheds.

I have called Lowell a nice town. It is well laid out, though irregularly, and the best streets are broad and well paved. The place has a pleasant air. The city hall and library are both good. They are stone buildings of decided architectural merit and superior to anything of the kind I have seen in similar American towns of this size. The library contains 62,618 volumes (1901); the number taken out for home reading was 139,514, and 15,356 were used in the reading-room which is not provided with newspapers. With regard to housing, the bulk of the workpeople live in tenements, but the houses are smaller than those described at Fall River; in 1900 there were 19,279 families living in 13,671 dwellings, the average number of persons to a dwelling was 6·9, and to a family 4·9. At Fall River the corresponding figures were eleven and five. The housing is good and not dear for America. The rent for a tenement consisting of dining-room, kitchen, scullery and four bedrooms is about 15s. a week. In spite of its pleasant look and real advantages Lowell has a death-rate of 21·45 per 1,000 (1901), and even this comparatively high figure represents a vast improvement on past years. In 1892 the death-rate was 27·67. This was largely due to the prevalence of water-borne disease. The water supply was taken direct from the Merrimac river without purification, and typhoid fever among other intestinal complaints was excessively rife. At Lawrence also, where the same conditions obtained, the same results were observed. The case of these two towns is very interesting. In 1890 the death-rate from typhoid fever was 15·8 per 10,000

at Lowell and 12·3 at Lawrence; in 1900 it had fallen to 1·7 in both towns. The cause in both cases was alteration of the water supply, but whereas at Lowell deep wells were substituted for the river, at Lawrence the same water was used, but after filtration. The average mortality from typhoid fever in those American cities which have registration, was 4·2 per 10,000 for males and 3·0 for females in the same year (1900); in the thirty-three great towns of England it was 1·7, or exactly the same as the improved rate of Lowell and Lawrence. It has since been considerably lower in both countries. In 1902 it fell to 1·1 in Lowell, and the average of the English towns was, curiously enough, also 1·1. From statistics published by the Department of Labour in Washington [1] it appears that the highest mortality from this cause in the English towns is about equal to the average of those in the United States, and that the English average is very little higher than the American lowest. Considering the unsatisfactory condition of several of the large towns in England, a rough estimate can be formed of the sanitary defects prevailing in the United States, particularly in relation to water supply. In Pittsburg the mortality from typhoid fever was 12·4 per 10,000, in Allegheny it was 10·0 and even in Washington it was 6·7. The water supply of Washington is taken direct from the river Potomac which is an opaque, reddish-yellow stream. For drinking it usually undergoes some sort of domestic purification, upon which no reliance can be placed as every sanitarian knows; for other purposes it is used as it comes from the river. I never, on any occasion, could see the bottom of my bath, which reminded me of the only other experience I have had of washing in equally dirty water. That was at Hamburg in 1892, at the time of the great cholera visitation, and before the water was filtered. The extreme nervousness shown at the time on the arrival of ships from Hamburg at American ports was explained to me when I saw my bath in Washington. Had cholera obtained a footing in America the people would have died like flies, as they did in Hamburg. To complete this rather long but not irrelevant digression I will add that the aver-

[1] *Bulletin*, No. 42, September, 1902.

age mortality from typhoid fever in fifty-seven large German towns in 1901 was less than 0·8 per 10,000.

An important industrial feature of Lowell is the Textile School, the largest and most complete institution of the kind in the United States. It was opened in 1897 and installed in a new building specially erected for the purpose in 1903. The school was apparently modelled on the German type of higher textile school, and its aims are wholly practical. It is intended for the training of both leaders and operatives in the local industries, for which skilled labour is lacking. It serves the towns of Lowell and Lawrence and the whole industrial district in their vicinity, and consequently it embraces the manufacture of wool and worsted, as well as that of cotton, in all their processes. There are five regular diploma courses for day students, namely: (1) cotton manufacturing, (2) wool manufacturing, (3) designing, (4) chemistry and dyeing, (5) weaving. Each course is intended to cover three years. These are for students of a superior class, and the fee is £20 a year for residents of Massachusetts, £30 for non-residents. No previous mill experience but evidence of a certain standard of general education is required. For operatives and others engaged at work in the day time there are evening classes. The courses range from one to four years (chemistry and dyeing). The evening classes are free to operatives and other residents of Lowell; otherwise the fees are 10s. a term or £1 a year. An interesting fact about the school is that it is the outcome of the enterprise of local manufacturers, who were the original incorporators. The bye-laws provide that two-thirds of the trustees shall be "persons actually engaged in or connected with textile or kindred manufactures". The buildings and equipment, exclusive of the ground, cost £65,000, to which the State contributed £18,350; the rest was furnished by the local municipalities, manufacturers and others. The school occupies an admirable site overlooking the river and stands apart with ample open ground about it. The building is plain but on so large a scale as to present an imposing appearance. The class-rooms and laboratories are very well appointed and the largest that I have seen in any institution of the kind. It is claimed that the machinery equipment is more varied than in any

other textile school either in America or Europe, and so far as my experience goes the claim is justified. No other school attempts to teach all the wool and cotton processes and at the same time contemplates adding silk and other fibres as well. But in my opinion something is lost in concentration by this extension, and the scheme of study seemed to me more ambitious but less close and practical than in corresponding German and English textile schools. The conditions of real manufacture are not reproduced in the same way as at M. Gladbach or Aachen, for instance; and students having no experience of the mill are likely to be turned out with a good theoretical knowledge but a defective practical grasp of the processes. In the academic year 1902-03 the total number of students was 545, of whom 116 attended the day and 429 the evening classes. Of the day students eighty-two came from a high school or academy, ten from colleges, ten from grammar schools and six from a university; the evening students presented a curiously varied list of occupations. The majority were connected with textile manufactures in some form or other, and included thirty-one weavers, nine spinners, eleven loom fixers, forty-two machinists, two foremen, sixty "operatives," and others; but there were also some 150 persons following totally different occupations: fifty-nine clerks, for instance, eight book-keepers, two druggists and a heterogeneous collection including a baker, tailor, blacksmith, jeweller, teamster, harness-maker and others having no more connection with textile manufactures than with deep-sea fishing. However one may admire the energy of such students in taking advantage of the opportunities afforded for improving their minds, their presence is hardly in keeping with the proper objects of the school or calculated to maintain a high standard of class efficiency.

In addition to the textile school technical education is also served in Lowell by an evening drawing school, established in 1872. It has had a useful influence in fostering the local manufacture of machinery, a comparatively young but growing industry.

With regard to general education, the number of children enrolled in the public schools in 1902 was 12,776, and in private ones, 4,226. There are eight Roman Catholic

schools and one college. Evening schools are a prominent feature ; they are largely attended by young foreigners, who being minors and unable to read and write English are compelled by law to attend school as a condition of employment. In 1902 the number of evening schools was fourteen, the total number of pupils on the books was 3,438, and the average attendance, 1,701.

Like Fall River, Lowell owns its own waterworks but not gas, electric light or tramways. The area of public parks is sixty-eight and a half acres against eighty-nine at Fall River. Neither town has any markets.

Vital Statistics of Lowell, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
94,969	29·4	21·5	7·9	195

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
121	98	4,079

Places of Worship.	Theatres.	Newspapers.	Public Library.
58	5	10	1

The number of arrests for drunkenness is enormous and requires some examination. Lowell is one of those places which sways backwards and forwards under local veto between allowing and prohibiting the liquor traffic. Several of its neighbours are in like case. When prohibition is in force in a town there is still a vast amount of public drunkenness, but the law has the effect of driving a certain number of customers to neighbouring places where prohibition is not in force. In 1900 Lowell had prohibition, with the result that the arrests for drunkenness fell from 2,973 to 2,063, which is still very high. This reduction was obtained at the expense of Lawrence and other neighbouring places, which had their charge sheet correspondingly increased. Lowell then reverted to licences, got back its full share of the drunkards and, in the reaction, something more. The report of the Board of Police contains some very pertinent remarks on the results of local veto.

Other Massachusetts Towns.

The two cities described may be taken as types of the Massachusetts industrial centres. The others strongly resemble one or other of them in all essential features. A few notes, therefore, on some of the more salient points bearing upon industrial conditions will suffice.

Lawrence might be called a small and less finished edition of Lowell. It lies on the Merrimac and derives a large part of its mill power from the river by means of a great dam which gives a fall of twenty-eight feet. Of 4,400 horse-power employed in one of the large mills, 1,800 is obtained from water and 2,600 from steam. The population in 1900 was 62,559, and 45·7 per cent. were foreign-born. Lawrence differs from Fall River and Lowell in having a large German element. The principal industries are worsted and cotton goods; in the former about 11,000 and in the latter about 6,000 persons are employed. Minor industries are machinery, paper and woollen goods, each employing some hundreds. Some of the worsted mills are very large and comparable with those of Bradford. The most famous of them are the Pacific Mills, which employ about 3,000 hands and carry on all the processes of worsted manufacture from start to finish. They contain a great deal of English machinery—combing machines from Leeds, spinning frames from Keighley and looms from Bolton. The goods turned out, however, are not equal to the product of the great Bradford mills; the labour is less skilled, and there appears to be a less intimate knowledge of the materials and processes and of the most advantageous use of the machinery. In combing and spinning in particular, Bradford is not seriously rivalled by the American mills, nor in the finer grades of finished cloth and dress materials. In lower grades, however, the Lawrence mills are efficient enough, and the tariff secures the home market to them. The public schools number twenty-five, and the Roman Catholic community maintains two.

Vital Statistics of Lawrence, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
65,000	29·1	17·2	11·9	184

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
62	62	1,321

Places of Worship.	Theatres.	News-papers.	Public Library.
35	3	15	1

New Bedford in many respects closely resembles Fall River. It lies on the coast and was formerly a head-quarters of the whale fishing, from which it derived much wealth. That industry is a thing of the past, but it has been replaced by a vigorous development of cotton manufactures. New Bedford ranks third among American cotton towns in regard to size and amount of product, but in efficiency it is first. It owns the most modern and advanced mills in the States and turns out the finest work. The population in 1900 was almost precisely the same as that of Lawrence, namely, 62,442, of whom 25,529, or 40 per cent., were foreign-born. This is a smaller proportion than in any of the towns previously mentioned. The reason probably is that New Bedford contains a larger element of well-to-do residents, left by its old trade, and that the manufactures are of comparatively recent growth. As they develop they will attract more foreign labour and the town will change its character. Thanks to the cotton industry it is growing very rapidly; between 1890 and 1900 the increase of population exceeded 53 per cent. The average number of persons employed in the cotton mills in 1900 was 12,286, of whom 5,000 were women and 887 children under sixteen. The number of establishments was fifteen, from which their size can be gauged. The best mills are very fine, quite up to date in every respect and equal to the best in Lancashire, which has in New Bedford its most formidable rival. The atmosphere favours fine spinning, and in two at least of these mills very high counts are spun, up to 250. The most skilled hands are English, and a great deal of the machinery. In a leading mill I found breaking, carding, combing and spinning machines all from Hetherington's, of Manchester The spinners are highly organised and have a fixed price-list, mutually agreed to between employers and employed,

as at Fall River and in the Lancashire towns. Very high wages can be earned, up to £4 a week. The town possesses a textile school, which was opened in 1899 and is confined to teaching the cotton manufacturing processes, including mill engineering. There are day and evening classes, as at Lowell, and the full courses are very much the same, but the New Bedford school has special short courses of a year intended for superintendents, which I do not see provided for in the prospectus of the Lowell school. The fees are the same. For the rest New Bedford is a pleasant little place and in some respects superior to the sister towns already described. The public library, with 77,000 volumes, is considerably larger. Then it has 255 acres of public parks against 129 at Lawrence, sixty-eight at Lowell, and eighty-nine at Fall River, though the last two have a much larger population. Similarly in regard to its streets: New Bedford has 136 miles of paved streets against sixty-one at Lawrence, thirty-seven at Lowell and ninety-four at Fall River. It is almost unique among American towns in having no unpaved streets or what we should call unmade roads.

Having mentioned this fact I may take the opportunity of saying that the weakest point in American towns is the streets. They are in general badly laid and worse kept. The material is varied but macadam predominates. Next to macadam granite "setts" are the most common form of paving, but they are generally allowed to get into a very bad state. The same may be said of asphalt, which is a good deal used in the principal thoroughfares. Bricks are still often met with, and if kept in order do not make a bad road. Wood is exceptional, cobble stones are pretty common and pretty bad; roads merely laid with gravel are counted as paved. Perhaps the most striking thing, however, is the large area of streets which are not made at all, but are merely sand or mud. Within the boundaries of New York city there are 762 miles of unmade streets, in Chicago more than two-thirds of the street area is in this condition, and even Washington has seventy-nine miles of unpaved to 241 miles of paved roads. All the main streets of Washington, however, are asphalted and well kept, and on the whole it may be called a well-paved city,

though it cannot compare with Berlin. The streets of Boston and Baltimore are also very fair, having a relatively small area unpaved. But taken all round I should say that Philadelphia is the best paved city in the States. It has the largest extent of asphalted pavement, namely, 321 miles, with 360 of granite, 134 of bricks and 226 of macadam; and the streets are kept in very fair order. New York is truly wretched. With the exception of a comparatively small area inhabited by wealthy persons the condition of the streets is astonishingly bad. London has no reason to be proud of its main thoroughfares; however well laid they may be, the enormous horse traffic soon knocks them to pieces and the constant taking up of the roadway for various purposes—a model of mal-administration—gives them no chance. But at their worst they are vastly better than those of New York, where holes more than six inches deep are quite common in the most important thoroughfares. I have seen numerous holes fully a foot deep in Broadway, and it is pitted with lesser ones. This causes less inconvenience than might be supposed, as the profusion of electric trams drives other wheeled traffic off the streets. In fact it is not noticed, for the people of New York seem to take no pride or even interest in the appearance of the streets except where the very wealthy live.

Vital Statistics of New Bedford, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
66,000	37·35	17·20	20·15	149

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
85	58	1,197

Worcester is a more important and more attractive place than any of the manufacturing towns hitherto described. It lives mainly by manufactures, and must therefore be called an industrial centre but, in truth, it is a good deal more. It is the second city in Massachusetts and has something of the capital about it. Founded in 1684 it can boast of a respectable antiquity, and in the history of American

industrial development it occupies an honourable place. The Worcester district is connected with the earliest, or almost the earliest manufacture of cloth, carpets, silk, wire and machinery; but the town has not specialised in any particular direction. It is the seat of a great many miscellaneous industries none of which have developed on a large scale. The leading branches are machinery, in which nearly 5,000 men are employed, wire (about 1,000), woollen goods (855), boots and shoes (803), clothing (817), fire-arms (632). But the interest of Worcester lies less in its manufactures than in its character as the intellectual centre of a manufacturing district. Of this the most prominent sign is the Polytechnic Institute, which resembles and rivals the Institute of Technology in Boston as a college of science. It was founded in 1868 and aims at giving a general scientific education, but special attention is paid to engineering. The number of students in 1902 was 248; nearly 1,000 graduates have obtained academic or industrial situations. There are other signs of intellectual life. The American Antiquarian Society has here its headquarters with a fine library and museum. There is also a Natural History Society with another museum. The public library (135,000 volumes) is far larger than that possessed by any American town of similar size, and higher educational establishments are numerous. Among them are Clark University, a Roman Catholic College, a military academy, the State normal school of Massachusetts and two high schools. Another interesting fact is that Worcester has a newspaper, the *Worcester Spy*, which has been published regularly since 1770. By a singular coincidence Worcester in England boasts the oldest-established English newspaper. The handsome appearance of the town is in keeping with its character. It is well laid out, and the public buildings and open spaces give it a superior air. There are numerous parks on the outskirts, and beyond them some attractive country. The population in 1900 was 118,421, of whom 37,652 or 31·8 per cent. were foreign-born. This is a much smaller proportion than in the more purely industrial towns. The Irish furnished the largest contingent (11,620), then the Canadians (8,367), and after them the Scandinavians (7,964). The last fact is curious, for Scandinavians chiefly affect

the North and West and are most numerous in Minnesota, Wisconsin and Illinois. There are comparatively few in New England, and Worcester forms quite an exception in this respect.

Vital Statistics of Worcester, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
121,064	27·03	16·50	10·53	128

The birth-rate is much lower than in the preceding towns with a larger proportion of foreign-born inhabitants, and the death-rate is also correspondingly lower. The infantile mortality is much less than in the textile towns.

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
136	90	3,524

Providence, Rhode Island.

Rhode Island is the smallest of all the States, but it is the most purely industrial and has the greatest density of population, namely, 407 persons to the square mile. Its neighbour, Massachusetts, comes next, with 348. Its industrial efficiency is proved by the fact that it produces goods to a greater value in proportion to population than any other state; the value *per capita* in 1900 was £86; Connecticut came next with £78 and Massachusetts third with £74. Pennsylvania, the great iron and steel state, was sixth with £58. The comparison clearly establishes the high productivity of these New England States and of Rhode Island in particular. Industrial activity is more concentrated here than anywhere else. The proportion of wage earners employed in manufactures in 1900 averaged 23·1 per cent. of the total population, or 98,813 out of a population of 428,556; but the greatest number so employed at any time during the year was no less than 27·1 per cent. of the population. This industrial activity, which is keeping pace with the general advance under modern conditions, is the more remarkable because Rhode Island possesses no natural advantages. It has a small

amount of water-power, but is more dependent on coal than either Massachusetts or Connecticut. Like them, too, it has to obtain coal and all raw materials from a distance, but without enjoying their transport facilities. It has practically only one line of railway and no real port. Providence, the capital, lies on an ocean harbour and has some traffic by sea, but for lack of water and docks the amount is insignificant. The flourishing condition of the manufactures, therefore, must be attributed to early establishment, energy and enterprise, and a handy supply of imported labour. Only one State has a larger proportion of foreign-born white inhabitants and that is North Dakota, one of the sparsely populated farming States of the north-west, to which foreign agricultural settlers go in large numbers. The wholly native population of Rhode Island (that is, the population having native-born parents, who are themselves, however, mainly the offspring of foreign parents) is only 153,413, which is less than the population of Providence City alone. The population born wholly of foreign parents is 55·6 per cent. of the whole, and that born of mixed parentage is 8·6 per cent. Rhode Island illustrates in a very striking manner the dependence of American industries upon imported labour. Of the foreign-born population (which is not the same thing as the population born of foreign parents) the largest contingents are supplied (1900) by the Canadians (39,277, mainly French), Irish (35,501), English (22,832), Italians (8,972), Swedes (6,072), Scotch (5,455) and Germans (4,300); there are also considerable numbers of Portuguese and Russians. The leading industries are textiles, which in 1900 employed an average number of 49,760 persons. Cotton heads the list with 24,032; then comes worsted with 14,896; dyeing and finishing, 5,942; woollen, 2,710; hosiery, 1,594. After textiles the largest groups are engineering and machinery, employing 8,799; jewelry and silverware employing 8,702. Both of these are growing very rapidly.

The cotton industry dates from 1790, when it was started at Pawtucket, and since that time Rhode Island has maintained its position as the second cotton manufacturing State, being only surpassed by Massachusetts. The

number of spindles at work in 1900 was 1,920,522, and of looms, 42,298. A special feature of the industry is the manufacture of small cotton goods, particularly tape, webbing, wadding and sewing cotton. In this branch, which is not much developed in the United States, Rhode Island stands easily first. In worsteds also it is only surpassed by Massachusetts. In both States the same change, from wool to worsted, is going on rapidly. The number of combing machines at work in Rhode Island in 1900 was 287. The jewelry trade is no doubt largely responsible for the high value of Rhode Island products. It has been established for more than a century, and it acquired prominence so early as 1794 by the invention of a truly characteristic process of filling in gold with cheaper metals by a man bearing the appropriate name of Dodge. If he is not the father of the word "dodge" he ought to be. In the whole range of American inventions none is more characteristic than this—to make something cheap look like a precious metal. The process was subsequently improved and further cheapened by an English workman from Birmingham in 1846. Silverware is an offshoot of the jewelry trade and equally a speciality of the city of Providence. That town alone manufactures one-fifth of the jewelry and nearly one-half of the silverware produced in the United States. In the production of engines, machinery and tools Rhode Island has more formidable competitors, but it possesses several establishments which enjoy the highest reputation for turning out good work. Another branch of manufacture that has been revolutionised of late years by American ingenuity has its seat in Providence and owes its development to that town. It was there that the cutting of files by machinery was first introduced by a local mechanic in 1864. The lead has now been followed in all countries, and it is probable that in a few years no files will be cut by hand. The capacity of Rhode Island to keep in the forefront receives yet another illustration from the modern industry of rubber boots and shoes, in which it ranks third after Massachusetts and Connecticut.

These brief notes will sufficiently vindicate the claim of the little State to exceptional enterprise. If Providence be

excluded the manufactures are distributed in a number of small centres. The second town, which is Pawtucket, only has (1900) a population of 39,231; Woonsocket comes third with 28,204. These are followed by a number of smaller places, which are rather large villages than towns. They lie along the railway and give a semi-rural character to industrial life in this area. The chief manufacturing activity, however, is concentrated in Providence, which accounts for nearly half the wage-earners of the State. It ranks twentieth among the cities of the United States and has (1900) a population of 175,597, out of which about 45,000 are employed in manufactures. I have already mentioned that, though a port, it does not do much business by water. Providence river runs through the town, permitting small steam-boats to penetrate nearly to the heart of it, and there are passenger services to New York and Newport, but Narragansett Bay, into which the river empties itself, is too shallow for large craft. Otherwise Providence would certainly be a great trading centre and might very well rival Boston. It lies on one of the main railway lines between New York and Boston, and is the centre of a number of branch lines. Like Boston, also, it is a capital and the seat of an administration. In character, however, it remains mainly industrial, though less purely so than Fall River, Lowell or Lawrence. One cannot call it a handsome town, but it has some handsome features. The main streets are good and the broad bridges over the river near the centre form a sort of square or open space, which has quite a Continental air. The State house occupies a commanding position clear of the town and is the finest building of the kind I have seen after the Capitol at Washington. It is in the same style. There are several other good and interesting buildings, including the city hall, court-house, custom-house, Brown University, and certain old colonial mansions. The ground is hilly and diversified, and altogether Providence makes a very favourable impression in spite of the inevitable ragged outskirts. With regard to the industrial conditions I have already said enough about the New England textile mills, and those of Providence offer no occasion for special notice. The worsted mills are by far the most important, employing about 8,000 hands. The cotton industry

is small. The metal trades are more peculiar to the place and more interesting. I have mentioned the importance of the jewelry industry of Rhode Island and it is almost all carried on at Providence, but as I have had to omit the same trade in England and Germany an account of it would have no comparative interest. It is otherwise with the large metal manufactures of Providence. They include several engineering works—notably the Corliss Steam-Engine Works, the Providence Steam-Engine Company, the Armington and Sims Engine Company—some textile machinery works and others devoted to the manufacture of small machines, machine tools and tools. One of these establishments is well worth seeing and many visitors have gone to Providence for the purpose of seeing it; among them representatives of the famous Berlin firm of Ludwig Löwe, makers of the same articles. Before building their own new works, which are a model, they paid the United States the compliment of visiting a number of establishments, including the works of the Brown and Sharpe Manufacturing Company at Providence. This business was founded in 1833 by David Brown, who was, I believe, an Englishman, and was carried on for many years by his son, at first alone and then in conjunction with partners. The present company was formed to take over the business in 1868. It manufactures an immense variety of small machines and tools of a class in which American skill, ingenuity and enterprise are at their best. Many hundreds of kinds of milling, grinding, screw and gear-cutting machines, lathes, drills, gauges, scales, rules and other tools and accessories are turned out here of the finest workmanship. The automatic screw and gear-cutting machines are marvels of ingenuity, and they are to be found in every up-to-date machine shop requiring such tools. The Germans now make them equally well, but America was first in the field, which is peculiarly her own. There are other makers in the United States, but none have a higher reputation than the Providence company. For forty years they have made the Willcox and Gibbs sewing machines, which afford a fair proof of sustained quality. The works, no less than the things made, are of a model character in that which seems to be the coming type for the best employers. It is half-way between the old conditions which

took no account of the workmen and the fancy appointments of the modern industrial Paradise. The principle is to provide good working conditions and pay good wages, but to avoid paternalism. The works are new and only a short distance from the centre of the town. I have seen none better. The shops are admirable, very light, clean and well kept, and as orderly as any in Germany. This holds good of the foundry which is quite new and a model of order. The works are closed for a fortnight every August for cleaning and whitewashing. The management is satisfied that the measure pays as it enables the shops and stock to be put in thorough order, and at the same time gives the men a good holiday. The number employed is about 2,300; they are of all nationalities, and include many skilled British mechanics; but a large part are unskilled men. Here may be seen a good illustration of one of the tendencies of modern industrial development. Many of the men are working automatic machines and are incapable of doing anything else; they are making things which they do not understand. The work requires neither intelligence nor skill; but the manufacturers do not want them to know too much. The brains of the establishment are in the drawing office, which is very large and well appointed. Nevertheless the workmen are a superior looking set; they earn from 8s. to 12s. a day. Washing basins, shower baths and clothes lockers are provided and used; and there is a library but no canteen. The men in the drawing office have been trained at the Technological Institute in Boston, at Brown University, and other places. The manager, like all others of similar experience that I have met, is strongly of opinion that it is best for a man to learn the practical work in the shop first and go to the technical school later. In spite, or perhaps because, of the good conditions of work, the firm is not in good odour with the trade unions and has been black-listed; that is to say, other people have been forbidden to deal with them on pain of incurring the union's displeasure. "The union secretary comes into the office and *a propos* of nothing asks us to 'recognise the union'. We refuse and are black-listed." This illustrates the crude methods of much trade unionism in America. The demand to "recognise the union" when no dispute exists generally means that the union has a diffi-

culty in getting men to join and asks the employer to help it, which is hardly his business.

I have devoted so much space to these works because they are a highly favourable example of the American factory and the most important single establishment in Providence. Those engaged in engineering and in other kinds of machinery are less remarkable, but their products have a wide reputation, notably the Corliss engines and the textile machinery of Crompton and Knowles, who are probably, with the Draper Company of Hopedale, the best known makers of textile machinery in the United States.

The foreign-born population of Providence is 31·8 per cent. of the whole, which is exactly the same proportion as at Worcester and much less than in the textile towns of Massachusetts. That, no doubt, is because it is less purely industrial. Another point of difference is that Canadians (7,732) are far less, and Italians (6,256) far more numerous. There are eight Italian benevolent societies in the city. Germans are also a strong contingent (2,257) and have numerous societies; but the largest sections are the Irish (18,686) and English (11,635). In connection with the subject of nationality some highly interesting information is afforded by the remarkably complete vital statistics recorded and published in Providence. They are of unique value and especially in relation to that which is the most important of all questions facing the American people—namely, the elements of national vitality. They have been kept for forty-six years. During that period the number of children born of American parents has never reached one-half of the whole. The highest proportion was 45·19 per cent. in 1869; it has since diminished—and for the last fifteen or sixteen years pretty steadily—to 27·92 per cent. in 1901. The native-born population at that time was 68·2 per cent. of the whole. According to these figures more than two-thirds of the population produced considerably less than one-third of the children born. But in order to get the relative fertility of the native and foreign populations correctly, it is necessary to take into account the mixed marriages. In 1901 the actual number of children born was 4,696, being at the rate of 26·35 per 1,000 of the population. They were thus distributed according to parentage:

American, 1,311; foreign, 2,440; mixed, 906. If we credit half of the last class to the American and half to the foreign element we get the following totals—American, 1,764; foreign, 2,893; being respectively 37·5 and 62·5 of the whole number of children. The true relation, therefore, stands thus:—

	Percentage of Population.	Percentage of Children.
American	68·2	37·5
Foreign	31·8	62·5

The birth-rates in the two sections were—American, 14·7 per 1,000; foreign, 51·6. This disparity is partly due to difference of age distribution, there being a larger number of women of child-bearing age among the foreign population. But the facts show how entirely the increase of population by excess of births over deaths depends on fresh immigration. That is seen still more clearly if the death-rates are examined. The death-rate among the American population was 19·7 per 1,000. That is to say, it exceeded the birth-rate by 5·0. The native population is, therefore, dying rapidly. And this process seems to be progressive; the death-rate in that section of the population which was not only born in America but whose parents were born there was 21·66 per 1,000. Thus a progressive decline of vitality is shown both by a lower rate of reproduction and a higher rate of mortality. The same tendency makes itself apparent in the infantile mortality, which is rising among children of American parentage, in spite of the very low birth-rate, and stands far higher than among those of foreign parentage; the respective figures in 1901 were—American, 173, foreign, 146, to 1,000 births. These figures are a terrible satire on the theory that it is better to have fewer children and take good care of them than to have more and neglect them. Nature is not mocked. One more point is brought out by the invaluable records of Providence. We have seen that the American section has never during the last forty-six years produced half the children born. It follows that the so-called native population is chiefly of foreign blood. The inference to be drawn is that the immigrant races become Americanised and lose their vitality in the next generation.

Public education in Providence is amply served by sixty-eight primary, fifteen grammar and four high schools. One of the last is for manual training but there is no technical school. Brown University, which was founded in 1764 and is a Baptist institution, had 677 male and 195 female students in 1900-01; the great majority were taking classical or general courses, but there were four students of general science, twenty-three of mechanical and thirty-seven of civil engineering.

Vital Statistics of Providence, 1901.

Population.	Births per 1,000.	Deaths per 1,000.	Excess of Births.	Deaths under one year per 1,000 born.
178,000	26·38	19·35	7·03	152

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
296	461	5,561

Places of Worship.	Theatres.	News-papers.	Public Library.
151	5	28	1

New York City.

To the rest of the world New York, being the largest city and the chief centre of business and pleasure, is the *de facto* capital of the United States though not the seat of Government. Like London and Berlin it is also a manufacturing town, but as in their case that element is overshadowed by others. It will, therefore, be treated in the same way and dismissed with some general observations bearing on its character as a capital.

The great city is fully representative of many features of American life, but the bad ones are more conspicuous than the good. In the first place it is typically cosmopolitan. The foreign-born population of the entire city is (1900) 1,270,000, or 37 per cent. of the whole; that of the central area (Manhattan and Bronx) is 41·5 per cent., a portion exceeded in several of the New England manufacturing towns which we have been considering but in few others. The foreign population includes representa-

tives of all nations, but the largest sections are: Germans (322,343), Irish (275,102), Russians (155,201), Italians (145,433), Austro-Hungarians (117,998), English and Scotch (90,358). All colours are also represented, the negroes number 60,666, Mongolians, 6,601 and Indians, thirty-one. It is a curious fact that of all the nations gathered in the city of New York from all the ends of the earth the smallest in number are the real natives and original owners; even such a petty State as Luxembourg outnumbers them. Turks, Arabs, East Indians, Pacific Islanders are far more numerous. The original natives of the whole country, although preserved, are dying out, and to judge from the vital statistics given above, their successors have begun to go the same road. Is it the destiny of the continent? Then, again, New York is typical of a great deal of America in its bustling life, its devotion to money-making, its adventurous methods of business, its extravagant expenditure and love of ostentation. All these things strike every one and have been so often described that I need say nothing more about them. It is also, as a town, typical of the national slovenliness. For a great city most of it is shabby, dirty, unkempt and untidy beyond compare, save in two respects: there are no overhead wires, and the atmosphere is most enviably clean and free from smoke. But one is continually reminded of wretched little towns in the south of Europe by such matters as the condition of the streets, with which I have already dealt; the gutters; the street sewer openings, which are of the primitive "wolf's mouth" form; the dilapidated horse trams that still run in the heart of the city or did in 1903; the rickety lamp posts and shabby letter boxes. These are originally painted silver, but weather and neglect turn them to a dirty drab. Their shabbiness is not peculiar to New York but it seems rather intensified there. So, too, with the slovenly speech of the people. Most capitals develop a slang of their own, consisting partly of words and phrases and partly of a peculiar pronunciation. The London cockney speech—always presented, in caricature, to American readers and playgoers as "the English accent"—has a counterpart in the slovenly enunciation affected by that class which in New York corresponds with the cockney in London; and

I fancy that the origin is much the same in both cases. The trick is an affectation thought to be smart, just as the failure to sound the letter "r" and the use of such ejaculations as "haw" are English affectations of speech in a different class. I observed one day in the company of some American gentlemen that the cockneys of New York, if I may use the term, seemed to make a point of never finishing a word, and I was told that it is a recognised habit. They seem too weary to say a whole word. "Sixth Avenue," for instance, is pronounced "Sis' Avn'," and "Yes" becomes "Ye". The quick closure of the lips after "Ye" produces an effect like a faint "p," and many writers make Americans say "Yep," but that is a mistake. The word is the smart cockneyfied form, produced by omitting the final letter. The trick seems to be becoming general among those who wish to be thought "knowing".

Slovenliness in speech, to which reference has been made in a previous chapter, is allied to other slovenliness and has a direct bearing on industrial efficiency, so that it may properly be mentioned in connection with New York where it reaches its highest expression. But the subject of pronunciation tempts one to be discursive, and I will beg indulgence for a few more observations. Most of the characteristic sounds in American speech, except some of those in the south which seem to have been assimilated from the negroes, can be traced to English local dialects with some admixture of Irish and French elements. The most pronounced of all, namely the long "o" uttered like "ah," in such words as "hot" and "stop," is the English south-country drawl. The Surrey rustic pronounces "bottle" "bah-tle". It is very interesting to trace these derivations; they are the outward sign of derived qualities. Cultivated Americans do not use the vowel sounds I have just indicated, but they are general in the streets, like the London vulgar perversions, which are commonly put in the mouths of Englishmen of all classes on the American stage and by many American writers This is notably the case with the drawled "a" as in "bawth" (bath), which is a pure vulgarism never used by any educated Englishman. The short, sharp American "a" is partly Irish and partly north-country English. Some of the American vowel

sounds are very pleasant to the ear, particularly in the mouths of men; the hard voices of the women pinch them too much and make them harsh. Speech in the Southern States differs considerably from that in the North and is full of pretty sounds and intonations. Between refined English and American speech, however, there is very little, and sometimes no difference. I have the English accent myself—and after all no apology is needed for speaking French with a French accent—yet I have been taken for an American by one in America on account of my speech.

Among the good features in which New York is representative, street locomotion must be counted. Apart from the old horse trams mentioned above the facilities are good and abundant. Rapid locomotion is, indeed, absolutely essential owing to the shape of the town, disposed as it is on a long narrow tongue of land surrounded by water save in one direction. The central business part can only expand longitudinally in that direction, and the residential quarters must either recede before it at the far end or be driven across the water. It is surprising how quickly the distances are covered by multitudes of persons with the aid of electric trains and trams. The urban trams of America are distinguished from those of Europe by being driven at a greater pace, and in spite of the traffic in New York they cover the ground in a wonderful way. It is done by running at full speed even for the shortest distance; they always start at full speed with a jerk which is dangerous to the unaccustomed traveller. The whole thing is characteristic —the mechanical appliances, the machine-made speed, the reckless use and the danger to life and limb—but I confess the pace appeals to me. Another great feature of New York, which also arises from its position, is the unrivalled accommodation for shipping provided by the great extent of water-board. This is, of course, the making of the place, and well the site was chosen. There is no need of docks, with all the delay, bother and expense of tidal gates. The largest vessels in existence simply steam up the mighty Hudson River, which is the harbour, and swing quietly into their berths alongside the quays at right angles to the stream, each in its own niche. They come in bow foremost and when they depart they simply cast off and back out

into the river. The water front is indented with these niches for miles, and as the shipping increases they simply extend further up along the shore. The enormous advantage of this arrangement, apart from the ease with which vessels arrive and start, is that the shipping extends along the peninsula, parallel with the town, and is thus distributed instead of being congested in one spot or at one end as it usually is in ports. The same arrangement obtains in the opposite shore of the Hudson in Jersey City and Hoboken, and it extends round the point of the peninsula, which is Manhattan, to its eastern shore opposite Long Island, on which Brooklyn lies. I have never seen these features of the port of New York described, but they are of incalculable importance. They explain the ability of the port to swallow with ease the colossal growth of the outward and inward trade and they render it capable of indefinite expansion, as the landward traffic can be handled with ease on this extended shore line without incommoding the central arterial thoroughfares. If New York had the sort of harbour most seaports have it could not carry the traffic through the heart of the city at all; but being so favoured by nature it can absorb an unlimited quantity and is destined to surpass London as certainly as the Hudson surpasses the Thames. It is impossible to estimate what this means to the development of the country, but in a certain sense New York is the making of the United States, and that more truly than London is the making of England or any other individual city is of its country. The point has an obvious bearing on the industrial future of the States; they can always rely on the port of New York. The men who chose the site were wiser than they knew. It was quite a long time ago, for New York is not a young city; it has been a municipality for over 250 years. The only weak point about the port is the long and tortuous channel outside, round by Sandy Hook.

The same factor of natural position, which has made the port and stimulated the system of street locomotion, is responsible for another but not a good feature of the city —the housing and the buildings. The compression into a narrow space has not only produced the vast twenty- and

thirty-storied blocks—said to have originated in Chicago —for business purposes, but has forced the bulk of the population into flats, as in Berlin. In the whole city of New York, which now includes Brooklyn together with another large slice of Long Island as well as Staten Island on the other side of the Hudson, the average number of persons to a dwelling is 13·7, which represents about three families; but in Manhattan and its northern extension, the Bronx, the average number is 20·4 or between four and five families; in Manhattan alone it must be very much higher. The "housing question" is here as exceptional as in London and huge tenement buildings are the rule. An investigation of the way the poor live in New York lay outside the limits of my inquiry and I could not give much time to it, interesting as it is; but I paid some visits to the lowest quarters and gained a few impressions. A swarming international ant-heap, with a great deal of obvious poverty and squalor and all the elements of lawlessness; but accounts of its horrors which I have read seemed to me exaggerated, as such accounts usually are. Similar descriptions of London and Paris have often been written, but I know from personal investigation that they are very highly coloured. I have been in all the "dangerous" places which "the police dare not enter" in London and in most of those in Paris. They may be dangerous to a single policeman because he is one, though the police do not say so, and they would be to a drunken man, a woman or other helpless individual displaying signs of wealth about the person; but to an able-bodied man they are not. Police protection is much less efficient in America than in Europe and lawlessness is far more general, as I have already pointed out, but I should not be afraid to go anywhere in New York. Misery is undoubtedly great, as great perhaps as in London, and the death-rate proves that the sanitary conditions are what might be expected from the general air of neglect. In 1901 it was 20·5 per 1,000 for the whole city against 17·6 in London and 18·0 in Berlin. Yet the proportion of well-to-do residents living in good conditions is quite as large in New York, and the age distribution of the population must be much more favourable on account of the vast number of

immigrants. There is a large and active public health staff and improvement is going on; but New York still exemplifies the backward state of sanitary administration general in America. About municipal corruption I can say little, as I have made no study of it, but the signs of maladministration in the past are all-prevalent. The street architecture is also typical. Its leading notes are anarchy, shabbiness, personal ostentation and public indifference. Those of London street architecture are dingy meanness, personal reserve and public aspiration imperfectly fulfilled; those of Berlin are monotonous order, suppression of individuality, public grandiosity and bad taste. Each of the three is a standing embodiment of prominent national characteristics. The sky-scraping buildings of New York testify to American ingenuity, adventurousness and contempt for order. They are a bold but not entirely successful attempt to neutralise the natural conditions by making room in a cramped space. They would not be possible everywhere, but Manhattan island is a tongue of rock and the foundations would bear any weight. They are attended, however, by certain disadvantages and seem to have passed the zenith of favour. It is being found necessary to regulate the height of buildings, and that process once begun will inevitably go on. The superior residential quarters form a great contrast to the rest. The houses are handsome, well-built and eloquent of wealth. The streets here are well laid and well kept, and the Central Park, which lies among them, is worthy of a great city.

A vast number of industries are carried on in New York but few are on a large scale. The largest single groups are clothing and tobacco; those to which the term "manufactures" usually applies are for the most part on a small scale, but nearly 20,000 men are employed in foundries and machine shops, and several thousand more in other branches of ironwork. Musical instruments, silk, boots and shoes are also manufactured on a considerable scale; but there is no concentration of special branches of manufacture. In short New York, as I began by saying, is rather a trading than an industrial centre; and with that I will leave it and pass on to Pennsylvania.

Pennsylvania.

Pennsylvania is a mighty manufacturing State. Judged by the amount of power used it is and has been for thirty years the greatest of all; judged by the value of products it has been for fifty years only second to New York. It is second in population with 6,302,034 inhabitants, of whom 733,834 are returned as "wage-earners engaged in manufactures". This represents 11·6 per cent. of the whole, a much lower proportion than the 17·7 per cent. of Massachusetts and the 23·1 per cent. of Rhode Island, and indicating less concentration than in the New England States; but it is almost exactly the same proportion as in New York and considerably higher than in any of the States further west. The density of population is 140 to the square mile. In another sense Pennsylvania boasts the greatest concentration of all. It has a much larger number of establishments employing over 500 hands than any other State. Its industrial activity is of long standing and in the first instance is due in a great measure to geographical position. The State lies between the great lakes and the Atlantic, and touches both. So do New York and New Jersey, but Pennsylvania has in addition water communication which they have not; the Ohio river brings it into direct relation with the Central States and by way of the Mississippi with the South. The importance of the internal water transport before the railroad era is shown by the fact that it was extended and completed by some hundreds of miles of artificial waterways, but as in England these have been neglected since. Unlike New England, Pennsylvania also possesses exceptional natural resources, not only in coal and iron but in other raw materials. It produces regularly more than half the total coal got in the United States, and it has also been exceedingly fortunate in the possession of natural gas, though the yield is now diminishing. Water-power, which was once an appreciable asset, though less than in Massachusetts and New York State, is also declining. The use of electricity for industrial purposes, on the other hand, is increasing, and in this respect Pennsylvania easily heads the list. The amount of horse-power derived from electric appliances reported in 1900 in the leading States was—

Pennsylvania, 107,888; New York, 78,000; Illinois, 49,250; Ohio, 42,202; Massachusetts, 32,843. And since the application of electricity is to a considerable extent a measure of industrial advance, Pennsylvania is evidently keeping well in the forefront. In no part of America are the industrial methods more completely up to date. The great manufacturing industries include both iron and steel and textiles. The total number of wage-earners employed in the production of iron and steel, engines and machinery in 1900 was 173,692, and in textiles 102,213. Pennsylvania, therefore, as a combined coal and iron and textile country, is analogous to Yorkshire and the Rhine province. The other industries are relatively unimportant. The largest of them are tobacco, leather and lumber, all of long standing and drawing the raw material from the spot.

The iron industry has a history of more than two centuries; it is mentioned as early as 1692, and in 1728 Pennsylvania exported 274 tons of pig iron to England. The appearance of America, therefore, in the market is not an affair of yesterday, as is often assumed, and there is more matter for surprise in the delay rather than in the rapidity of development. The manufacture was at first carried on upon the eastern side of the State; then, on the discovery of magnetic iron ore in the Cornwall hills, it moved a little westward near Harrisburg, the present capital and the seat of some of the largest steel-works in the States. The day of Pittsburg was still far distant. A blast furnace was built there towards the end of the eighteenth century but it was abandoned for lack of ore in the neighbourhood. The production of steel can hardly be said to have begun in America before the nineteenth century, though it had been attempted as early as 1750. About 1812 a steel furnace and a rolling mill were started at Pittsburg, and from that time slow and somewhat uncertain progress was made for many years. The very rapid development which has taken place more recently must be ascribed to a number of causes. One was the substitution of coal and coke for charcoal in the production of pig iron from about 1840 onwards. Anthracite coal was chiefly used at first. This is found on the eastern ranges of the Alleghany hills, but the great development of the Pennsylvania iron and steel industry has coin-

cided with the utilisation of the bituminous coal fields, which lie on the western side. This, together with the tapping of the Lake Superior ores and their transportation by water to Pennsylvania affected a gradual shifting westward of the centre of the iron industry to the Pittsburg district, which lies on the western border conveniently placed between the sources of the ore and the fuel and is easily reached by both. Meantime the production of steel had been improved and developed. Pittsburg came to the front with crucible steel about 1860; Bessemer steel followed and, still later, the open hearth process. The most marked feature of the recent progress of this great and fundamental industry has been the increasing use of open hearth steel, and the rapid growth of the manufacture of tin and terne plate.

Of the textile group the most important items are hosiery, silk, cotton and wool. These are all old-established industries in the State. The making of hosiery and woollen cloth was introduced by the earliest German and English settlers some 200 years ago; silk was encouraged by Benjamin Franklin in 1750, and a spinning jenny for spinning cotton was put up in Philadelphia in 1775, a very few years after its invention. Factory-made cotton goods were turned out at least as early as 1782. Here, again, the current idea, that England owed her supremacy to the advantage of starting the "factory system" and the use of machinery long before any other country, requires a good deal of qualification. Philadelphia was very early in the field, and its rise to the position of the greatest manufacturing city in the world has been gradual. I will justify this description presently when I come to the town itself.

The industries carried on in Pennsylvania are widely distributed in a large number of centres. After Philadelphia and Pittsburg, which head the list, come in order of industrial importance, Allegheny, Reading, Scranton, Lancaster, Erie, Allentown Altoona, Chester, McKeesport, Harrisburg, and others. All these are small or medium sized towns and of no special interest. I mention them to give an idea of the distribution but do not propose to describe any of them though I have visited some, as Philadelphia and Pittsburg will sufficiently represent the industrial conditions prevailing in this coal and iron State.

Philadelphia.

I have just called Philadelphia the greatest manufacturing city in the world, and I believe it to be so. True, it does not compare with such monstrous aggregations as London and New York; but then they are not manufacturing cities in the same sense. They are primarily something else and the manufactures are mainly accidental or secondary; they are there because the population or the traffic is there. That is shown by their miscellaneous character and the small scale on which most of them are conducted. In the aggregate they employ a vast number of people and produce an immense quantity of goods, but individually they belong rather to the small than to the gross industries. But Philadelphia is primarily a manufacturing place, and the leading industries are carried on in very large establishments on a great scale. It is also a river port, which enables it to add shipbuilding to the rest, and it owns the largest yard in the States; but the port business is quite subordinate. Since the days of William Penn, the Quaker, who founded the town in 1682, it has been the seat of manufactures, and that character has always been prominent; but in times past Philadelphia has played another part. It has a very distinguished history, more distinguished on the whole than that of any other city in the States. Here the earliest sittings of Congress were held before the revolution; here the Declaration of Independence was drawn up and issued in 1776; here the Constitution was forged in 1787; here the first President resided and here was the seat of Government of the United States down to 1800. The population was then 67,811 and exceeded that of New York; the inhabitants were citizens of no mean city. A century later they numbered 1,293,697 and formed one of the great cities of the world and the third in size in the American continent. It therefore combines the high tradition of leadership in a mighty political movement with modern industrial development on the largest scale, and therein it has the advantage of New York and still more of Chicago, which represents the highest point (or lowest depth) of commercialism and nothing else.

I think Philadelphia looks its character. It has not the charm of the old German capitals which have become manufacturing towns, such as Dresden, Munich, Stuttgart or Düsseldorf, but it has character and dignity. It is a city, not a ragged overgrown village like most of New York, nor a huddle of dingy squalor like the greater part of London, Manchester or Glasgow. I have been to the outskirts of the town in most directions and I have found all of it decent and some very good. There is nothing grand in Philadelphia. The city hall is of colossal size—said to be the largest in the world—and it has cost millions, but in spite of its dimensions and a central tower 547 feet in height it fails to impress and is architecturally a failure. There is a superabundance of churches; I have made out nearly 800 of various denomination from the directory, but none of them are really fine though two or three are interesting. The best buildings are those of the University of Pennsylvania and some of the hospitals, with which the town is magnificently endowed. The old Independence Hall, from the steps of which the Declaration was proclaimed, possesses great historical interest and inspires respect as the shrine of a splendid tradition, but its architectural merit is slight. In spite, however, of the absence of beautiful or imposing edifices the general impression produced is very favourable. The standard maintained is high and some features are very pleasing. Of late years the municipal administration has been notorious for corruption, but the town bears as many signs of having been well administered in the past as New York does the reverse. I have already mentioned the superior character of the street paving and particularly the large extent of asphalted street. There are 321 miles of asphalt, 360 of granite, 226 of macadam and 134 of brick. The streets are not only well paved but exceptionally well kept. A much larger amount of garbage is disposed of weekly in Philadelphia than in any other American city, and it is all burnt. The lighting is also unusually good. The number of arc lamps is 9,083 against 11,975 in New York. It may be interesting here to compare the street lighting of the five largest cities in the United States.

	Miles of Street.	No. of Lamps.	No. of Lamps per Street Mile.
New York . . .	2,527	61,424	24
Chicago	4,162	35,743	8
Philadelphia . . .	1,540	44,011	28
St. Louis . . .	1,678	15,961	9
Boston	587	14,953	25

Philadelphia has the greatest number of lamps to the street mile, and since it also has a larger proportion of arc lamps than the rest, except Boston, it is statistically, and in my opinion actually, better lighted. Washington also has twenty-eight lamps to the mile and is about equally well lighted. The position occupied in this little table by the more western cities is highly significant.

Another conspicuous feature of Philadelphia is the very large area of public parks which it possesses. The total is upwards of 4,000 acres. The greater part of this consists of Fairmount Park, which lies just outside the town and extends along the Schuylkill River for some miles; it covers 3,000 acres. Parts of it are conventional, laid out ornamentally, with statues of Lincoln, Grant and Washington, and it contains zoological and horticultural gardens, waterworks, and various buildings; but other parts are quite natural and romantic. It is a fine possession, unequalled so far as I know by any provincial town; and the people are justly proud of it.

The town, which lies on flat ground between the Delaware and Schuylkill rivers, is well laid out on the geometrical plan, and the streets running north and south are numbered, while those crossing them are named; and in the centre, which is the oldest quarter, the pretty idea of giving the names of trees forms a pleasant change from the usual poverty-stricken street nomenclature. Chestnut, Walnut, Cherry, Spruce, Vine, and so on, have a flavour. Chestnut is the aristocratic street both for houses and shops; it corresponds to Fifth Avenue in New York or to Piccadilly in London. So far as shops are concerned Philadelphia is second to no city in America, and that means in the world, for American shops are more splendid than those of any other country. The dress shops surpass everything, and it is noticeable that those for men are scarcely less con-

spicuous than those for women. The most beautiful shop window I have ever seen was in Philadelphia, and I never passed it without stopping to admire. An account of it will give the reader a good idea of the American art of dressing the shop window. It was excessively pretty by day, but after dark exquisite. It belonged to a great drapery store occupying a whole block and was one of many. The rest were very fine but this beat them all. The three sides of the room (the window forming the fourth) and the floor and ceiling were all set with electric glow lamps each tied up in a knot of the most delicate pink and green ribbons. There were about eighty of these lamps to that single window and the only objects in it were a large white hat and a white parasol. So it remained lit up all night. Shop windows are always interesting, but I never saw one really beautiful before. Let no one think this little matter trivial or irrelevant. It illustrates one of the secrets of American commercial success. The shop window embodies the art of attracting attention, exciting curiosity and making a good impression—the great art of advertising; and no people spend so much thought and money upon it as the Americans.

In regard to housing Philadelphia differs markedly from New York and, indeed, from any of the towns I have described. Boston most nearly resembles it. In the first place flat life gives way to private houses. There are in the city 265,880 families living in 241,589 dwellings, which is not far short of a house to every family. It may be put in another way. The average number of persons to a dwelling is 5·4, and of persons to a family, 4·9. How different this is from the usual conditions in the great cities may be seen from the following table, which compares Philadelphia with ten others in their order of precedence:—

City.	Population.	Average Number of Persons.	
		To a Dwelling.	To a Family.
New York	3,437,202	13·7	4·7
Chicago	1,698,575	8·8	4·7
Philadelphia . . .	1,293,697	5·4	4·9
St. Louis	575,238	7·0	4·6
Boston	560,892	8·4	4·8
Baltimore	508,957	5·7	4·8
Cleveland	381,768	6·0	4·7
Buffalo	352,387	7·1	4·8
San Francisco . . .	342,782	6·4	4·8
Cincinnati	325,902	8·0	4·4
Pittsburg	321,616	6·3	5·0

It almost follows as a matter of course that the character of the residential buildings is more regular than elsewhere. There are few or none of the great structures in which many families are housed. And, more than that, there is a marked absence of pretentiousness on the one hand and of squalor on the other. The rich are less splendidly, the poor less miserably, housed. The streets wear a general aspect of modest but solid comfort well diffused. Slums, of course, there must be in such a huge place with a large trading element; they have been officially investigated and reported on. And, of course, there is poverty; but a good deal of time spent in looking for slums revealed very much less than experience led me to expect, and, on the other hand, brought to notice large working class areas of excellent houses after the style of the best industrial housing in England. Rents are much higher, but not so high as in many towns in America. Very good six-roomed houses with bathrooms were about 14s. a week, four-roomed about 10s. A very ingenious system of numbering the houses is worth notice, as it enables one to find a particular address or to ascertain one's whereabouts with great ease. I have already said that the streets running north and south are numbered first, second, third, etc., beginning from the Delaware River and proceeding westward; they are, of course, intersected by the named streets running east and west; the houses in the latter are numbered according to the streets they lie between on the basis of hundreds. For instance, those in

any cross street lying between sixth and seventh street are numbered from 600 to 700, and so with the rest. In like manner the houses in sixth and seventh streets are numbered according to their distance north or south of a central line formed by Market Street, which is the main artery in the heart of the town. Thus the street number indicates the locality and the distance from the centre in any direction.

The site was no doubt originally chosen on account of the Delaware River, which forms the eastern boundary and divides the State of Pennsylvania from New Jersey. It is a noble stream pretty nearly a mile wide here at a distance of ninety miles from the Atlantic sea-board. The big liners and battleships come up to Cramp's famous yard which lies some way above the middle of the town. The river front is lined with quays like the Hudson at New York and is devoted to business. This is the dirtiest and least attractive part of Philadelphia; no use is made of the river for ornament or pleasure, though there is a certain amount of passenger traffic by local boats in summer.

The racial distribution of the population differs considerably from that in the towns previously reviewed. The negro element is very much larger. I have hitherto said nothing about this factor because in the New England industrial centres it is too small to possess any importance. In most of them the coloured population is quite insignificant —far below 1 per cent.—and even in Boston and Providence, where the callings mostly pursued by negros (waiters, boot-blacks, attendants, etc.), are more developed, they only numbered between 2 and 3 per cent. In New York they are less than 2 per cent., but in Philadelphia the proportion rises to 4·8 per cent. The actual number is 62,613, but this has no industrial significance. They are not employed in manufactures, but in hotels and clubs and other occupations higher in the social scale. I have no information on the subject, but it appeared to me that Philadelphia is the home of a coloured aristocracy. There are eighteen African Methodist Episcopal Churches. I attended service at one of them on a Sunday, and found a striking contrast with others I have attended in the South. The service was

practically indistinguishable from a high church (not ritualistic) Anglican one in England, except that the surpliced choir was formed by women. The sermon, the tone and manner of the whole service and the demeanour of the congregation reminded one of St. Mary Abbots or any church of that moderately high order which is now so general in England. The signs of refinement, taste and culture were striking. Every Sunday that I spent in the States I made a point of going to as many churches of different kinds as I could get in, and my experience ranges from a pure specimen of negro fervour in Columbia (S. Carolina) to St. Patrick's Cathedral in New York and Trinity Church, Boston, which corresponds (say) with St. Margaret's, Westminster, and is the resort of the intellectual aristocracy. The African service in Philadelphia was no whit less refined. The strain of negro blood ran very thin in the clergy and in many of the congregation, so thin in some cases as to be recognisable only on careful scrutiny. I have seen the negro born exalted on a different field in Philadelphia in the person of a coloured foreman ordering about a gang of European workmen. A second point of difference is that the foreign born element is less, being only 22·8 per cent. The order of the nationalities is: (1) Irish, 98,427; (2) Germans, 71,319; (3) English, Scotch, etc., 46,264; (4) Russians, 28,951; (5) Italians, 17,830; (6) Austro-Hungarians, 8,209; (7) Poles, 7,554; (8) Scandinavians, 3,769; (9) Canadians, 3,283; (10) French, 2,521. The total number of foreign-born residents is (1900) 295,340. Those of British and German origin are chiefly engaged in the manufacturing industries.

Of the total number of persons above ten years of age engaged in gainful occupations 259,197 are employed in "manufacturing and mechanical pursuits," as against 152,262 in "trade and transportation". This will show the preponderance of the industrial element; it constitutes 25 per cent. of the whole population above ten years of age. The proportion in Fall River, which is of the purest industrial type, is 42 per cent., that in New York is 20 per cent. Numerically, therefore Philadelphia approaches more to New York in its industrial character; but the term "manufacturing and mechanical pursuits" is wide, and the "gross industries" of Philadelphia, as I have already observed,

make it a true manufacturing city. The metal trades and textiles are almost equally represented. According to the Factory Inspector's Report for 1903 the number employed was—textiles, 46,423 in 573 establishments; iron and products, 37,564 in 250 establishments; miscellaneous manufactures, 43,805 in 736 establishments; leather, 7,226 in 50 establishments. The metal trades are chiefly concerned with the production of finished articles in great variety, including ships, machinery, hardware, nuts, bolts, rivets, etc. Baldwin's huge locomotive works, which occupy a great extent of ground in the heart of the city, are the most important single establishment and the largest works of the kind in America. Of 2,831 steam locomotives built in 1900, 1,465, or more than half, were credited to Pennsylvania, and the great majority of them came from Philadelphia. The industry dates from 1831, and of late years it has enjoyed a rapidly increasing export trade. The number of locomotives exported from America rose from 142 in 1894 to 525 in 1900. The special article on the subject in the census states that they "have found their way into all parts of the world, having proved their superiority over every type of foreign locomotive with which they have been brought into competition". By this time, however, the statement requires a good deal of qualification. Many of the engines supplied, and notably those used in India and Egypt, have proved unsatisfactory on trial and have earned a bad name. They are cheap and turned out very rapidly and the interchangeability of parts makes them convenient; but they do not last. They are very wasteful of fuel; they break down soon and often, on account of rough workmanship and want of finish. In short, they have the characteristic merits and defects of American work. The great locomotive works in Philadelphia have been condemned in scathing terms by the Secretary of the English Amalgamated Society of Engineers, in his report as a member of Mr. Moseley's labour party, and I can only endorse his account. They are quite out of date and not to be compared with the chief locomotive works in England. It would, indeed, be difficult to find any large engineerng works in England and impossible to find any in Germany so old-fashioned and in every respect unsatisfac-

tory. They ought to be removed bodily out of the city and rebuilt where there is plenty of space. The working day is ten hours on the day shift and thirteen on the night shift. The average wages are 8s. a day.

Cramp's shipbuilding yard is the second great metal-working establishment in Philadelphia, but since I have omitted corresponding works in England and Germany from my survey, and in shipbuilding America cannot be said to compete effectively at the present time, I need say no more about it.

Of the textile industries the largest is the manufacture of carpets and rugs, in which over 12,000 hands are employed. It is an old Philadelphian industry dating back at least to 1791, and it is carried on here upon a larger scale than in any other American city. The modern methods of manufacture are claimed for an American inventor whom I have already mentioned. "It is to the inventive genius and business ability of Erastus B. Bigelow, of Boston, Mass., more than to any other man, that the carpet industry of the world owes its great prominence. He first, in 1844, adapted the power-loom to the weaving of ingrain carpets. A few years later he invented and patented the power-loom for weaving Jacquard Brussels and Wilton carpets."[1] On the other hand I find it stated in the *Penny Cyclopædia*, published in 1836, that the Jacquard loom had then been for some years applied in England to the weaving of ingrain (Kidderminster) carpets and partly applied to Brussels. I do not know whether the two statements are reconcilable or not; but if modern carpet-weaving was invented in the United States the start has not been well maintained. It required a protective tariff to secure the home market, and in spite of it Europe still exports carpets to America. The quantity in the twelve months ending June 1904 was 665,562 square yards, of which 254,744 square yards, or considerably more than one-third, came from the United Kingdom. The exports from the United States in the same year were only 60,723 yards, and so far as I can ascertain none came to the United Kingdom. It is the finer kinds of carpets and rugs that are imported into

[1] *Twelfth Census*, U.S.A., vol. ix., p. 104.

America. As in cotton and worsted goods, the American manufacturers are still behind their English competitors in the higher grades. Philadelphia is the greatest centre of this industry in America; it manufactures very nearly one-half the total value of carpets produced in the United States: and the cheaper kinds constitute the great bulk of its output, out of 4,693 looms engaged in weaving ingrain carpets it owns 3,737; but the higher grades—Brussels, Wilton and Axminsters—are produced more in Massachusetts and New York.

The carpet and other textile mills are mostly situated on the northern side of the town a long way from the centre. The work-people live in the vicinity in capital houses and form a regular industrial quarter. Many of the mills are new and the conditions are good except for dark weaving sheds on the ground floor with other rooms above them, necessitating the use of electric light all day. In a leading mill, in which Brussels and Wilton carpets are made, I found English looms, made in Heywood and Halifax, which seems curious if they are an American invention. The weavers also were exclusively English and chiefly from Kidderminster. The superintendent or foreman was also English, from Halifax. The wages earned here were very high; male weavers were making from £4 to £6 a week and female (also English) from 48s. to 60s. They admitted that they worked very much harder than in England and found the high wages an incentive. The week is sixty hours; the day begins at 6.45 and three-quarters of an hour is allowed for dinner.

Another important branch of textiles in Philadelphia is upholstery. It has undergone very rapid development in recent years and now constitutes a considerable branch of the cotton manufactures. Philadelphia has almost a monopoly of it in the States. The conditions of work are practically the same as in the carpet mills, but the earnings are less. In one mill in which they were said to be unusually high I found weavers (nearly all men) getting from 60s. to 72s. a week, winders from 28s. to 36s. and other hands about 28s. The manager here was a German from Würtemberg, and a highly ingenious gentleman. He illustrated the influence which the air of the United States

certainly possesses in developing American qualities in immigrants. Some clever devices which he showed me were quite characteristic. One was a simple way to make reversible curtains. These are apparently much prized in America but they require special machinery and are costly to produce. He showed me some which looked quite right but were made on the ordinary looms; he had simply sewn two together back to back. The workmen employed here were American, German and English.

It would require a volume to give an account of all the manufactures of Philadelphia, but perhaps the foregoing notes will suffice to indicate generally the conditions of industrial life prevailing in this remarkable city. On the whole they are better than in any other town I have seen in the States, and I am not sure that the expression might not be extended to cover other countries. But I cannot leave the subject without trying to give some idea of the extent and variety of the manufacturing industries carried on, and I therefore append a list of the principal ones with the average number of wage-earners employed, extracted from the census of 1900.

Industry.	No. Employed.
Foundry and machine shop products	19,643
Clothing, factory product	12,836
Carpets and rugs other than rag	12,190
Hosiery and knit goods	11,944
Cotton goods, small wares and waste	10,757
Woollen goods	9,438
Worsted goods	7,407
Leather	6,949
Tobacco	6,032
Iron and steel, various	4,869
Boots and shoes, factory product	3,782
Dyeing and finishing textiles	3,455
Shirts	2,829
Cars	2,780
Silk	2,506
Tin and Copper	2,304
Fur Hats	2,116
Chemicals	1,917
Glass	1,914
Brick and tile	1,451
Hardware	1,273
Electrical apparatus	1,253
Cordage and twine	1,168
Brass	1,104

In addition there are many other true manufactures such as pottery, paper, artificial flowers, buttons, brushes, jute, files, cutlery, musical instruments, shoddy, wire, tools, toys, etc. I am certain that no city in any country can show so great a variety of gross industries carried on upon so large a scale. It is unique in textiles alone; practically all the branches are included except lace and linen. Yet the metal trades are nearly equal to the textiles, and to both are added leather, boots and shoes, paper, glass, chemicals and others which are hardly ever found in combination. Philadelphia has the makings of ten ordinary manufacturing towns; and to this remarkable conjunction of trades must be ascribed the high and stable condition of prosperity, of which so many signs are visible. The attention of those who are interested in technical education is drawn to the fact that here in the greatest of manufacturing cities the multifarious industries owe their flourishing condition in but a minor degree to this element. The Philadelphia School of Applied Art, founded in 1876, contains a Department of "Textile Design and Manufacture, comprising fabric structure and design, weaving, colour harmony and figured design, chemistry, dyeing and printing, wool carding and spinning, worsted drawing and spinning, cotton carding and spinning, hosiery knitting and spinning". This sounds exceedingly complete, but is somewhat misleading. The institution is not exactly, as might be supposed, a higher trade school like that of Crefeld or Bradford or Lowell, where all the processes of manufacture are taught in a practical way: it is rather an art school with industrial applications. As such it undoubtedly performs a valuable function; the designing department is very extensive and well organised and there is a large instalment of looms. The art side of textile manufacture is well developed and the teaching is of great advantage not only to manufacturers and experts but also to aspiring operatives, of whom a considerable number attend the evening classes. The list of past students includes many designers, dyers and loom fixers engaged in the mills. I do not wish to belittle the value of the school, but it does not offer a complete training even in the limited branches of industry to which it applies. The engineering and

machinery branches are served by the Drexel Institute, which was founded in 1891 and is one of the numerous marks left on modern American education by the hand of the millionaire. The founder has expended some £600,000 on the building, equipment and endowment, and has presented a very fine gift to Philadelphia. Its educational functions are somewhat miscellaneous, but so far as engineering and machinery are concerned it resembles the Art School in coming in from above rather than working up from below; the courses are scientific and theoretical. The case is otherwise with a third establishment, the Spring Garden Institute, which was founded in 1851 in order to teach industrial drawing and design. Hand trades and electricity were subsequently added. There are day and evening courses, the latter for working mechanics and apprentices. In 1900 it had 101 day students and 793 night students. The great majority of the latter attended the drawing courses; the mechanical department had seventy-five and the electrical 140 students. The institution has undoubtedly exercised a considerable influence in assisting capable and aspiring mechanics to fit themselves for higher positions; but the numbers seem small compared with some of the English schools doing similar work. The higher branches of engineering are provided for by the University of Pennsylvania, which in 1900 had an aggregate of 182 students engaged on civil, mechanical, electrical and chemical engineering.

With regard to public education Philadelphia, which is a county, is a separate unit and independent of the State Board of Pennsylvania. The elementary schools are managed by sectional or district boards, elected *ad hoc*, under the supervision and control of a board of education, appointed by the courts in session, which also manages the evening and higher schools. I am afraid the system is far from satisfactory. While I was in the city the president and two members of one sectional board were convicted at quarter sessions on the charge of demanding bribes from candidates for the post of teacher. The number of school buildings (1901) is 328, containing 2,878 school-rooms. The number of children on the register is: Day schools, 166,013; night schools, 19,304; kindergartens, 14,959; high schools (five)

5,641. The average attendance at the evening schools is 9,713, which is an unusually high proportion. Great stress is laid on manual training schools.

It is somewhat surprising that such a city as Philadelphia should not have had a free library until 1892 and then only a branch. The central library was not opened until 1894. Its comparatively short life, however, has witnessed a very rapid development. In 1901 it possessed 239,183 volumes and had fourteen branches. The circulation amounted to nearly 2,000,000 volumes, not including the fine reference library which is said to be very largely used; but 77 per cent. of the issues were fiction. The reading-room is very abundantly supplied with monthly and weekly periodicals both American and English, but the only daily paper on the list is *The Times* (London); perhaps that is the weekly edition.

The vital statistics of Philadelphia are defective and of doubtful value, but if the registered death-rate of 18·27 (1901) be correct it is below that of the New England manufacturing towns and to be ascribed, I should say, to the good housing conditions and general level of prosperity. The death-rate from typhoid fever is 3·3 per 10,000, which is very high, and undoubtedly due in a large measure to the water supply, which is unfiltered. Philadelphia is a good instance of American backwardness in relation to water supplies. The town is a pioneer in the matter, and has owned its own water works longer than any other in the States, or in England either so far as I know. It built them in 1801. Yet in 1901 the water remained unfiltered, in spite of a very severe visitation of typhoid fever in 1898-99, when over 14,000 cases occurred. The purification of the supply has since been taken in hand and may, perhaps, be completed by this time. But filtration works will not end the matter. It will be found necessary to stop the monstrous waste which has been going on under an unlimited supply of unfiltered water. The consumption in 1899 was about 240 gallons a day per head of the population, which is about ten times as much as is required for use and an impossible quantity to supply filtered. The charge of bad administration, which I have mentioned above as having been current of late years, seems to be well founded

in this particular. Philadelphia is exceptional in owning its own gas-works, which were built by the town in 1836, but are leased to a company.

Lying half-way between New York and Baltimore, Philadelphia marks the first stage on the great roads to the south and the west from New York. This position makes it the largest railway centre in the continent. Its water communication has already been mentioned. It is also connected by direct railway lines with several resorts on the Atlantic coast. The largest of these is Atlantic City. The proximity of this American Brighton or Blackpool enables the work-people of Philadelphia to do what few others in America can, and take trips to the seaside in summer. This practice, which has become almost universal among the English working classes, is one of the features of industrial life that most markedly differentiate England from other countries.

Vital statistics parallel with those given for other towns are not available for Philadelphia, which is not at all to its credit.

Miscellaneous Statistics.

Police Force.	Liquor Licences.	Arrests for Drunkenness.
2,822	1,737	30,428

Places of Worship.	Theatres.	Newspapers.	Public Libraries.
760	16	184 (26 daily)	15

Pittsburg.

Between Philadelphia and Pittsburg lies the width of Pennsylvania and much more. To go from one to the other is not merely to cross the Alleghenies, where the coal-fields lie hidden up among the hills, but it is to pass from the east to the west. For the great coal and iron State has two faces—one turned towards the east, the old, the more settled and mature, with its comparatively fixed lines and limited range of development; the other towards the west, the new, the raw and adolescent with its incalculable possibilities, fierce throb of life and keen spirit of adventure. Pittsburg is the gateway of the west and through its portals rushes the tide of the newer industrial America. Here the

stream is most turbulent, the battle fiercest, the jostling throng most eager. Further west the volume spreads out in many directions over a broad surface and quiets down; but here it seems pent up into a narrow gorge, through which it tears and surges, like Niagara river between the Falls and the broad calm expanse of the so-called Whirlpool. Thus it is that Pittsburg is in a sense the most typical industrial centre in the State. It gathers up and concentrates the restless energy, the reckless hurry to make money and the contempt for everything else, of the newer industrial world. I suppose some of the English manufacturing towns passed through this stage once. Grime and squalor unspeakable, unlimited hours of work, ferocious contests between labour and capital, the fiercest commercial scrambling for the money literally sweated out of the people, the utter absorption by high and low of every faculty in getting and grabbing, total indifference to all other ideals and aspirations—these marked the rise of the great English industrial edifice, and they mark the centre point of the much vaster American one to-day.

Pittsburg is not a town of yesterday; it took its name from the English statesman and has had a charter since 1816, which represents quite a respectable antiquity. The name, by the way, is spelt both with and without a final "h"; the local official street guide spells it both ways, the U.S.A. census leaves out the "h". I have already mentioned that a steel furnace and a rolling mill were in operation in 1813, and that the situation of the place on the Ohio river made it a trading centre in the period before railways were built, but its rise to industrial importance really dates from the western development of the Pennsylvania coal and iron fields, followed by the opening up of the Lake Superior region. The town itself, however, only represents a part of the vast industrial edifice which has been built up here as a result of that movement. The name is loosely used for the whole district. For instance, none of the famous Carnegie steel concerns are in Pittsburg itself, nor are the Westinghouse works, nor others which are commonly described as "at Pittsburg". The correct geographical expression is "Allegheny County" which includes Pittsburg as the central point and business headquarters, surrounded by numer-

ous minor centres or satellites—Allegheny, McKeesport, Duquesne, Homestead, Braddock, Wilmerding, and others—all within a small compass. It is a wonderful and unique concentration. Neither the Ruhr Valley nor South Staffordshire equals Allegheny County. Here truly iron is king, seated on a throne of coal. The population of the county is 775,058 and nearly one-tenth (72,671) are employed in 236 establishments devoted to iron and its products.[1] The only other industries on a large scale are electrical supplies, glass, cars and air-brakes. Pittsburg itself represents less than half the population of the county and a still smaller proportion of its industrial section, since it is the commercial and traffic centre. No one who sees Pittsburg alone and misses the satellites knows what the name really signifies. Yet it is pre-eminently a manufacturing town comparable with Sheffield and resembling it more nearly in size and character than any other place. It lies on the point of land where the Allegheny and Monongahela rivers join to form the Ohio. This is the site of an old fort, which bore the name of Du Quesne under the French, and subsequently that of Pitt under the English. The situation, which recalls that of the famous Hungarian fortress, Komárom or Komorn, on the Danube, was obviously chosen for the protection afforded by the two smaller rivers. They are shallow, rapid, turbid streams capable of carrying craft of very light draft. On the opposite bank of the Allegheny lies Allegheny city. The two towns are connected by nine bridges and are therefore topographically one. Sundry small suburbs occupying a similar position across the Monongahela have already been annexed by Pittsburg; if it were to swallow Allegheny in like manner it would rank seventh instead of eleventh among the cities of the United States. And it might very well look forward to a still more grandiose position. For the outlying industrial boroughs are at no great distance, and if the recent rate of development is maintained the intervening space will be rapidly filled up, and Pittsburg might extend her administrative ægis over the whole.

Imagination fails to picture the hideous scene that would be presented by such an enlarged Pittsburg. Some-

[1] These figures are taken from the annual report of the factory inspector for Pennsylvania, 1903.

one has called the place "Hell with the lid off," and sundry persons have paid him the compliment of annexing the phrase. It has even been presented to the House of Commons as an original effort on the part of a well-known member of that assembly. Its picturesque force suggests an American origin, but, whoever the author may be, every visitor must acknowledge its appropriateness. People have said to me, "Well, but what about Sheffield?" I have already made the comparison in describing Essen and can only repeat that compared with Pittsburg and its neighbourhood Sheffield is a pleasure resort. The heart of the town is not so bad. There are fine shops and fairly good public buildings and the main streets do not lack dignity though they are much too narrow to carry the swarming traffic; the warning clang! clang! of the street cars is incessant and they can only move at a foot's pace. The congestion is greater than in New York, Philadelphia or Boston, and is only surpassed by London. In the pollution of the atmosphere by smoke Pittsburg beats the world, and in this respect it presents a striking contrast to the eastward towns already described, where anthracite coal is burnt. A rough way of measuring smokiness is to note the condition of one's linen, and two measures may be used—the tint produced and the time taken to produce it. Judged by these tests Pittsburg is at least twice as smoky as Sheffield or Manchester, and London cannot compete at all except in a bad fog. The buildings, which become black sooner than they do anywhere else, attest the same supremacy. There appears to be no attempt whatever to prevent or mitigate smoke, and the nature of the factory chimneys conduces to increase it. Instead of having a comparatively small number of lofty brick shafts the iron and steel works use a much greater number of short metal ones resembling steamer funnels. For instance at Essen the steel works, in which 25,000 men are employed, are served by about sixty tall shafts; at Homestead the steel works, in which only 6,000 men are employed, have about 150 short ones. The latter may be more economical or efficient, though I doubt it, but they certainly produce far more smoke and emit it nearer the ground where it has less chance of being carried away. This is one reason for the supreme smoki-

ness of the Pittsburg district. Another is the lie of the ground. The river valleys are rather deep and the smoke from the works, which lie low along the banks, is pent in by the hills rising behind to a considerable height. Some years ago, I believe, natural gas was largely used and the smoke abated; but possibly this has been abandoned from failure of the supply. At any rate it is hard to believe that things were ever worse.

The smoke, however, is only one item, and though particularly obtrusive to the senses less significant than others. You must leave the centre of the town and journey to the outskirts and beyond to see what this representative modern American city really is. In the first place notice the wires overhead. There is a network of them—telegraph, telephone and tram wires—and they are put up in a slovenly, makeshift fashion. The telegraph supports are not straight, dressed poles, firmly planted and braced upright, but rough trunks of fir trees leaning in every direction, with the wires between them not drawn taut but sagging heavily. The others are in like case; they lean and sag and straggle. Everything is rough, unfinished, rushed up and apparently on the point of falling down in a ruin. In the second place, notice how the car bumps and rattles over the ill laid metals, along the wretchedly made and worse kept roadway, filled with garbage and filth. Then as you pass a little further out you come to the bare hill sides rising from the river. The place is certainly not favoured by nature for these river banks must always have been dreary; but their ugliness has been increased tenfold. At one spot they are naked, at another they carry clumps of miserable dilapidated wooden houses or single ones standing alone. Everything bears the same stamp of rubbish and ruin. Rotting fences stand before these houses, broken wooden steps lead up to them, drains trickle down the hill beside them; here and there a dead tree stretches out its withered arms. The air is murky with the gloom of perpetual smoke, and through it gleams the mockery of washed clothes hanging out to dry; women are said to wear black underclothes in Pittsburg.

Such is Pittsburg along a main road leading out of the heart of the town. It is not all as bad as that. In the

better residential quarters the houses are good and some of the suburbs on the high ground away from the rivers and the works are even free from smoke. By contrast they are considered quite attractive. On the other hand some of the more densely inhabited parts are even worse; as an exhibition of modern and recently built slums they have no equal in my experience. And if the visitor pursues the same road a few miles further he will come to something which puts Pittsburg in the shade; and that is Homestead, the first of the series of small towns up the Monongahela Valley more or less created by the various iron and steel works which bear the name of Carnegie. If Pittsburg is hell with the lid off Homestead is hell with the hatches on. Never was place more egregiously misnamed. Here is nothing but unrelieved gloom and grind; on one side the fuming, groaning works where men sweat at the furnaces and rolling mills twelve hours a day for seven days a week; on the other, rows of wretched hovels where they eat and sleep, having neither time nor energy left for anything else. Nor is there anything else for them to do if they wished. I was not surprised at the English workman who told me that if any one would give him five dollars a week he would go home and live like a gentleman in—the Black Country. Five dollars a day are no uncommon earnings at Homestead, but they are dear at the price. The output is enormous and there is an appearance of great efficiency, but such industrial conditions as these are not stable. The human element demands recognition and will obtain it. Trade unionism has been put down with an iron hand dipped in blood, and it is kept down. It has not been recognised since the violent contest of 1892, but it is a plant which does not die when it has anything to feed on, and here it has much. To watch and keep it under is anxious work, and eventually futile. The management shows obvious signs of nervousness on the subject, and nervousness is weakness. The following details of wages were given me: Day labourers, 6s. and 7s.; helpers (young men), 9s. and 10s. a day; helpers on the mills (tonnage men), 28s. a day; rollers, £2 to £4 a day; heaters on the furnace, £30 every two weeks.

Beyond Homestead the valley is dotted at short dis-

tances with other large works belonging to the Carnegie Steel Company. At Rankin, Braddock and Duquesne they obtrude themselves in the same way and produce the same effects. These works, in which some 13,000 or 14,000 men are employed, are a great manifestation of energy, no doubt, but hardly of the most admirable kind. They represent the success of a keen commercial instinct and an unswerving devotion to money-making, relentlessly pursued. It has served industry by cheapening production, but I cannot find that it has originated anything. It has fattened on other men's brains and sweat, and in the pursuit of cheapness and commercial success it has trampled better things under foot. One may bow to the genius which has created an Essen or an Elswick, but only those who worship the god of gold can pay homage to the lord of squalor who sits enthroned on the Monongahela. The money made here carries a taint with it—*olet*.

Examples of a different sort of industrial efficiency of which America may be justly proud are to be found a little further on in the same neighbourhood. The Westinghouse establishments at Wilmerding and East Pittsburg stand for the highest type of American industrial genius and must command admiration. They are the creation of an innovator, an organiser and a worker of the same mould as those whose brains and labour have built up great industries in the old world. His name ranks with those of Krupp, Siemens, Armstrong and Lister. Mr. Westinghouse is a born inventor. His air-brake is as well known in Europe as in America, and if his work in electrical appliances—the adaptation of alternating currents, the induction motor, methods of lighting, and other things—is less familiar it is because the subject is more obscure. Whenever I get upon an electric tram-car in England I look at the mechanism, and I too often find Pittsburg stamped on it. It comes from the Westinghouse works. Since the establishment of a branch at Manchester the name has become more generally associated with electrical machinery; but Mr. Westinghouse is also an inventor and large manufacturer of gas and other engines. The Manchester works are modelled on those near Pittsburg, and the remarkable scale on which all these great establishments are built, their

organisation, equipment and general adaptation of means to an end reveal a master mind. I do not know of anything which has a superior claim to respresent the best model of modern factory installation in regard to premises, plant and working conditions. It conforms to the standard, though on a larger scale, which I have mentioned above in describing the Brown and Sharpe works at Providence as the coming type. The shops are well built, lighted and warmed, well arranged and well kept, and the well-being of the workers is considered, as an element of efficiency. All requisite conveniences, such as clothes-lockers and lavatories, are provided, but no superfluities. The working week is fifty-four hours. The day begins at 7 A.M. and ends at 5.30 P.M. with three quarters of an hour for dinner; on Saturday they leave off at 12.30 P.M. The hours are therefore quite up to the English standard. A great many girls are employed; as coil winders they are paid 5d. an hour. The total number of persons employed in 1902 at the three large establishments in East Pittsburg and Wilmerding was about 11,000. A special feature of these works, which may be partly responsible for the exaggerated belief in the virtues of "scrapping" is the practice of constantly trying new machinery. But that is due to the personal genius of Mr. Westinghouse, who continues to work at mechanical experiments and not only invents the appliances which he produces but frequently devises special tools and machines for making them. I was informed that a certain quantity of machinery is regularly displaced every two or three months, but it is sold, not "scrapped". The working habits of the creator and head of this great concern are an example of the highest form of industrial enterprise. Though his years are no longer few he is not content to sink into a well-earned repose, but comes down regularly to the works and takes off his coat in the experimental department among the experts he has gathered round him. Pupils come here from all parts of the world, and no one who goes over the establishment can doubt that they come to the right place and the right man. Technical schools are many and various, but this kind is still the best of all.

Wilmerding is not such a dreadful place as Homestead;

it is tolerable but dreary. I asked what the men did in their leisure and was told that they do not play games; there is nothing for them to do but go to the public houses, of which there is one to every hundred inhabitants.

All these Pittsburg satellites are very small but rapidly growing towns. Braddock has about 15,000 inhabitants (1900); Homestead, 12,000; Duquesne, 9,000; Wilmerding 5,000, and the others a smaller number. But McKeesport which lies a little higher up the Monongahela, is a more important place with 34,227. It is another iron and steel centre and of the same stamp as its neighbours—a dismal, uninviting little town. The large works of the National Tube Company are the principal establishment. Like the Carnegie Company this is a member of the United States Steel Corporation. That huge combination, however, has not absorbed all the steel works of Pittsburg. The largest business in the city itself, that of Jones and Laughlin, stood out when the Corporation was formed and declined to join it. It is a very strong concern, possessing its own iron mines and able to maintain an independent position. I have met with manufacturers who preferred to deal with it for their raw material because it was outside the combination. There are others in a similar position, and though they are all small in comparison with the Corporation, they prevent the latter from having the monopoly of the market, with which it has been credited.

Pittsburg, with a population of 321,616 (1900), ranks eleventh among the cities of the United States, coming between Cincinnati and New Orleans. The population has more than doubled in twenty years, partly by the absorption of outlying districts, which is a regular episode in the growth of towns. With Allegheny the total would be about 450,000 or rather more than that of Leeds. The percentage of foreign-born is 26·4. Germans are the most numerous (21,222), followed by Irish (18,620), English and Scotch (13,705), Poles (11,184), Austro-Hungarians (5,752), Italians (5,709) and Russians (4,107). As elsewhere the four last nationalities represent unskilled labour, which is largely employed in the great works. In going over the works at Homestead I asked my way of four men in succession, not one of whom understood a word of English; they looked

like Hungarians. Of the total population engaged in "gainful occupations" 26 per cent. are occupied in "trade and transport" and 37 per cent. in "manufacturing and mechanical pursuits". The manufacturing element, therefore, largely preponderates. In addition to these industries already mentioned (iron and steel, machinery and glass), "marble and stone work," pottery and tobacco employ several thousand hands. The other industries are on a small scale and there are no textiles at all.

The large proportion engaged in "trade and transport," however, indicates a great commercial activity. Chronologically this element comes first, for the early importance of the place, as I have already pointed out, lay in its position at the head of the Ohio system of waterways; it has grown with the manufactures, the development of the coal-fields and the railways, and it will continue to grow. The further development of the industrial middle West will all bring grist to the Pittsburg mills. I can see no limit to its possible expansion, lying where it does at the gate of the West, in direct communication with New York (through Philadelphia), with Baltimore, Washington and the South Eastern States, with Cincinnati and the Mississippi States, with Buffalo, with Cleveland and with Chicago. It is a great centre, indeed, on which all these threads converge. Twelve railway companies run their lines into and out of Pittsburg. It is a place to toil in and get rich—the best, I daresay, in the world; and it is a place to toil in and go under—the worst in the world. I have spoken of the conditions of life; they are generally bad and sometimes extremely wretched. Everything is excessively dear; the cost of living is higher than I have found it anywhere else; housing is dearer, worse and scarcer than anywhere else. Rents are from 3s. to 5s. a week per room; down at Homestead a man will pay 8s. a week for a room if he wants it to himself, and an uncommonly poor one at that. While I was in Pittsburg a poor woman one day wandered round with her children looking in vain for a lodging until she fell exhausted in the street. It happened to be outside the Stock Exchange or some such place, so the case made a stir, the attention of members coming out was drawn to it and the woman was assisted. My belief is that if a thorough investigation of

housing and living conditions were made in and around Pittsburg the disclosures would put in the shade anything that can be found in New York, London, Paris, Liverpool or any other great city famous for slums. The town possesses a large area of parks, but they are all a long way out with the exception of Schenley, and that is not near the poorer residential districts.

With regard to education there is little to be said. Less attention appears to be paid to it than in other large towns in the North. There are the usual elementary schools, but no evening classes; and the high school provision is relatively small. For superior and special education there is, or was until recently, no provision. The project of a technical school was under discussion in 1903 and was the subject of one of those innumerable local scandals which pervade municipal life in America; a portion of it has lately been opened.

The registered death-rate in 1901 was 19·7. Typhoid fever was excessively rife and caused a higher rate of mortality—12 per 10,000 inhabitants—than in any other American city.

Miscellaneous Statistics of Pittsburg, 1901.

Police Force.	Liquor Licences.	Arrests for Drunkenness.	
497	572	15,040	
Places of Worship.	**Theatres.**	**News-papers.**	**Public Library.**
170	—	59	1

Ohio and Illinois.

I am reluctantly compelled by reasons of time and space to omit these two great industrial States from my survey; but to pass them over altogether would be to give an incomplete impression of the resources and development of the United States.

Ohio ranks fifth among the States in the value of manufactured products and it is steadily becoming more industrial in character. The "wage-earners employed in manufacturing establishments" increased from 2·6 per cent. to 8·3 per cent. of the population between 1850 and 1900. Lying contiguous to Pennsylvania it enjoys the same advantages as the western side of that State, namely, proximity to the

coal-fields on the one hand and access to water communication by the great lakes and the Mississippi on the other. It is therefore natural that both should be distinguished by the same class of products. Since 1870 Ohio has ranked second only to Pennsylvania in the production of iron and steel, which forms its leading industry. It is a little nearer the Lake Superior ores and a little further from the Pennsylvania fuel supplies; and these two factors fairly balance each other. Cleveland, which is the chief iron and steel centre, is not very many miles beyond Pittsburg and enjoys an almost equal command of fuel and particularly of the great coke supplies from the Connellsville hills. Other important centres are Loraine and Youngstown. The second great industry is machinery. In the manufacture of metal working machinery Ohio is the leading State; the chief centres are Cleveland, Cincinnati, Columbus and Hamilton. Agricultural machinery is another important branch; it is made at Springfield, Dayton, Akron, and elsewhere. At Dayton is the celebrated model establishment of the National Cash Register Company. Among other industries boots and shoes, pottery, cars, clothing, tobacco and lumber are the most important. A little hosiery is made, but textiles in general are conspicuously absent.

Illinois is the third State in rank, as measured by the value of manufactures. This is very largely due to the meat-packing trade, centred in Chicago. It is a great national asset, but a specially American trade, and therefore valueless for purposes of comparison. A great deal of machinery is also made in Illinois and the manufacture of agricultural implements is the second industry in importance. That is also chiefly centred in Chicago. The iron and steel works are considerable and increasing. The principal seats are Chicago and Joliet. The other industries are very numerous but do not present any special features. Chicago has the industrial character of a great capital; in addition to the staple trades mentioned a host of miscellaneous manufactures, such as minister to the needs of a large population, are carried on. There is no other large city to dispute its supremacy. The other manufacturing towns are small. Peoria, Quincey, Springfield, Rockford, East St. Louis and Joliet are the principal ones.

No doubt Ohio and Illinois have a great industrial future before them ; how great it is impossible to say. But from the competitive point of view they are still, in spite of their growth, less important than the New England and the Middle States ; and though the former may wane owing to their situation the latter are for the same reason not likely to yield their supremacy. There is certainly no sign of slackening energy or capacity in Pennsylvania or New York as compared with the Middle West.

The Southern States.

To pass from the regions just discussed to the South is to enter another world. The great cities, the cosmopolitan crowds, the rush and struggle of life, the smoke and roar of the furnace are left behind ; and one comes into a wide, quiet land of little towns and villages, separated by long tracts of undulating country often clothed in trees, with the inviting outline of high hills in the background. An agricultural land in the main, producing cotton, corn, rice, tobacco and sugar. But it has of late years been undergoing a rapid industrial development. The ravages caused by the Civil War have been repaired, capital has been introduced and manufactures built up. They are concerned with the raw materials produced in the region and are more varied than might be supposed. Cotton is by far the most important, and in the industrial competition of the world the cotton mills of the Southern States are a factor to be reckoned with. They cannot be omitted from any survey of the competitive capacity of the United States, and it is the more necessary to notice them because of the peculiar labour conditions prevailing in these States. Most of the other industries stand on a different footing and do not call for notice here ; they are concerned with the various food stuffs locally raised, with tobacco, turpentine, cotton-seed oil, petroleum and lumber. But there is one, in addition to cotton, which ought to be mentioned, and that is iron. The mountain chain which forms the back bone of Pennsylvania and is the mother of those great industries which have just been described, extends from north to south through or past the Virginias, the Carolinas and Georgia right down to Alabama ; and it does not lose its virtue all

the way. In Alabama there are extensive deposits of coal and iron ore, with limestone, which are now actively worked. This State is second only to Pennsylvania and West Virginia in the production of coke, and owing to local deposits and cheap labour it is able to produce pig iron very much cheaper than any other. In 1900 it stood first in the production of iron for casting and in the export of pig (113,185 tons, largely to England). This advantage is rapidly leading to the development of secondary industries—steel, cast iron goods (particularly tubes and stoves), engines and machinery. In short, Alabama promises to play the same part in this field that the Carolinas and Georgia are playing in the cotton industry; it already has several growing centres, bearing such significant names as Birmingham, Bessemer and Sheffield. With these few preliminary observations I will pass on to the cotton manufactures of the South.

According to Comtelburo's list there were in the Southern States in 1903, 594 mills with 6,714,589 spindles and 153,741 looms employing 110,000 hands. The "Southern States" means practically North and South Carolina, Georgia and Alabama, though the industry is carried on upon a small scale in many others. Some cotton manufacturing, I may observe, is done in no fewer than thirty-two States of the Union, but the scale is very small in most of them. The real business is concentrated in some eight States in the North and four in the South. As I have already pointed out, Massachusetts is by far the most important of them, but the Carolinas come next. The best measure of importance is not, I think, the value of the product, which varies with the class of goods, but the number of persons employed. In 1900 the principal cotton States stood thus:—

State.	Average Number of Wage-earners.
Massachusetts	92,085
North Carolina	30,273
South Carolina	30,201
Rhode Island	21,823
New Hampshire	20,454
Georgia	18,283

Since 1900, however, the Southern States have undergone a rapid expansion. According to the *New York Com-*

mercial and Financial Chronicle the following increase has taken place :—

Southern States, 1900 and 1903.

	Mills.	Spindles.	Looms.	Consumption (bales).
1900 . . .	400	4,298,188	110,015	1,479,006
1903 . . .	594	6,714,589	153,748	1,949,902

The rapid increase is the striking fact about these States Between 1890 and 1903 the number of mills increased 144 per cent. ; spindles, 332 per cent. ; looms, 323 per cent., and consumption, 270 per cent. Such a development as this is portentous. Proximity to the raw material is, of course, the primary reason, but cheap labour is also an important inducement. There are practically no factory laws in these States and until recently there has been no restriction on the employment of child labour. These advantages have attracted northern capital, and mills have multiplied with astonishing rapidity, particularly in South Carolina. which has now distanced all other States except Massachusetts and ranks easily second in cotton manufactures, having some 2,500,000 spindles and 60,000 looms. It is a singular and interesting industrial district, totally unlike any other that I have ever seen. There are no large towns and not many small ones ; but for hundreds of miles the mills are put down here and there along the railways, generally in groups of two, three, five or perhaps eight or ten. The largest cotton towns in South Carolina are the capital, Columbia (21,000), Greenville and Spartanburg (12,000 each). Those in North Carolina are hardly so large ; they are not towns at all, but large villages. In Georgia they run somewhat bigger ; Atlanta and Augusta, which are both the seats of cotton manufactures, must be called towns. Speaking generally, however, it would be true to say that we have here an elongated string of mill villages extending for hundreds of miles. Some of them have been created out of the forest and consist of nothing whatever but the mills and the mill population. In some cases the selection of the site has been determined solely by the railway and the cotton-fields ; in others water-power is a third factor. A good deal of water-power is applied in these States, though much less than in New England, and in some cases it is applied in the

most modern form and converted into electricity. In one settlement I visited I found a mill containing 68,000 spindles and 1,500 looms operated by electricity to the amount of 3,600 horse-power, the current being brought a distance of four miles from the power-house on the river.

The mills are modern, spacious and good. They are built of red brick, made on the spot. I was particularly struck with the spaciousness of some of the rooms, permitting ease of movement among the machinery without danger. The lighting and the ventilation are good; humidifiers are general, and there is little doubt that the successful development of the industry is largely dependent on the use of these devices. All the machinery that I saw was American, made in the North; probably the machinery makers have a financial interest in the erection of many of the mills, as in Lancashire. The only serious fault to find with the premises was the dustiness of the atmosphere in the blowing and carding-rooms. They were generally full of cotton fibre, and the machinery was smothered in it. A striking feature is the great size of some of the mills. The Olympia at Columbia is celebrated on this account; the three mills belonging to the Company contain 190,000 spindles and 4,700 looms; the largest of these great structures contains 100,000 spindles and 2,400 looms under one roof, in rooms 550 feet by 150 feet.

Now these Southern mills have been the subject of a great deal of controversy, chiefly on account of the long hours worked and the employment of child labour. The hours are undeniably long—sixty-three and sixty-six hours a week are the rule, and a great deal of child labour is employed. In 1900 the number of children under sixteen employed in cotton mills in the Southern States was 24,438. Every one must agree that for children the hours are too long. Moreover a considerable proportion of them were very young. There is no age limit in Georgia and the legislature has declined to make one; there was none in South Carolina until May, 1903, when ten years was adopted, rising yearly to twelve; in North Carolina and Alabama the limit is twelve years. As a matter of fact very young children have been employed; I have seen them myself. They are sent to the mill by their parents,

as they used to be in England. But these facts seem to have stimulated some writers to paint the Southern mills in a deep uniform black, unrelieved by any white or even grey. They have set out to find horrors and have found them, sometimes without going through the ceremony of entering the mills. This agitation has naturally provoked replies, and independent investigations have shown the other side. Beyond the facts mentioned, my own observations do not bear out the charges made, though I have been through some of the mills most violently attacked and have carefully examined the work-people both within and without the factory. There is no doubt that, although wages are relatively low, they earn far more money than they did outside and are able to live better. Nor could I discover any signs of dissatisfaction with their condition. These work-people are very interesting because they are a class apart. They are pure Americans; there are no foreigners among them. The proportion of population born of native parents in the States we are considering is: Alabama, 97·5 per cent.; Georgia, 98·3 per cent.; North Carolina, 99·3 per cent.; South Carolina, 98·7 per cent. A very large proportion of this native population is negro. In South Carolina the negro element considerably exceeds the white; in North Carolina it is about one-third of the whole; in Alabama and Georgia nearly one-half. But the negro element plays no part in the cotton manufactures, which are carried on entirely by white labour. Negroes have been tried, but the experiment has failed. It has been found impossible to get them to work; it is said that the machinery sends them to sleep. I understand that the race feeling is an absolute bar to the joint employment of white and coloured labour; it is exceedingly strong in this part of America; at all the railway stations, no matter how small, separate rooms are provided for white and coloured passengers, who refuse to mingle.

Consequently the mills are entirely manned by whites. They come from off the land and largely from the farms up in the hills. These are the "poor whites" of the South, and poor indeed. They scrape a bare living off the farms and hardly that sometimes. To them the mill is wealth and they rush into it eagerly, men, women and children.

Their labour is quite unskilled when they arrive; they have to learn in the mill, and the children often learn much quicker than the parents and bring in more money to the family exchequer. In one large mill a girl of about fifteen was pointed out to me as the best weaver they had. From published details and from particulars obtained by myself I find the rates of daily earnings to be as follows: Spinners, 15d. to 4s.; card-room hands, 2s. to 6s.; weavers, 3s. to 7s. The low earnings of spinners is due to the fact that all spinning is done on ring frames and requires comparatively little skill. Weaving is generally done on Northrop automatic looms and according to skill, the number of looms operated and the wages earned vary widely. These earnings will appear very low, but the cost of living is relatively still lower. Food of all kinds is very cheap and poultry in particular ridiculously so; chickens cost from 4d. to 1s., ducks, 7d., turkeys, 2s. and 3s.; meat is 5d. to 8d. a lb.; flour, 14s. to 20s. a barrel; eggs, 4d. to 8d. a dozen. In short, food is about one-half the price it is in the North. Rents are still lower. As the mills are generally put down where there were no dwellings before, the owners have to provide them. The houses are of wood on brick supports and generally hold one or two families. The rents for such houses are as low as 2s. and 3s. a week for a good four-roomed dwelling. It will be seen from these details that the conditions of life are by no means so bad as might be inferred from the wages and hours and absence of factory laws. They are, in fact, better than in the more "advanced" communities in the North. I have not said anything before about the price of food and the cost of living in America, except in regard to housing, because they will be discussed in a subsequent chapter; but the difference between North and South is so great as to more than counterbalance the difference in earnings. And in regard to other external conditions the advantage lies equally with the South. Life is rural, not urban, in these mill settlements; there is none of the squalor and congestion of the town; the people live close to their work amid surroundings which are often charming and sometimes ideal—veritable garden cities. Such a one is Pelzer in South Carolina. It has a population of 7,000

to 8,000, which has grown up round the mills in twenty years. The business was started in 1881 with one mill containing 10,000 spindles; there are now four containing 130,000 spindles and 3,600 looms and giving employment to nearly 3,000 hands. The whole place is owned by the firm, which has built it all. The people have good houses for which they pay 8s. a month rent, churches of various denominations, schools and stores, where they can buy every necessary good and cheap. It is all set among fir trees in very pretty country. No liquor is sold in the place. These people are not badly off or discontented; they have £20,000 in the savings-bank and get 4 per cent. interest on it. The Southern mill operatives require very little supervision and work just as well without it. The weather is very hot in summer, no doubt, but they are natives and accustomed to it. A town-bred people would find it dull, but it is less dull than the lonely farms from which they come. I nowhere found any local feeling against the mills, which have brought work and wages. In one of the larger towns I had a long talk with a policeman about them, an intelligent and kindly man. He spoke enthusiastically of the mills, and he had some knowledge of them, as he had sent his own son into them; the boy earned a shilling his first day.

The competitive importance of the Southern cotton industry lies at present wholly in the lower grades of goods. Some mills are equipped for finer work but in the great majority low counts of yarn are spun and plain cloth or common prints are woven. The goods are produced on a great scale and very cheaply. A mill running (say) 1,200 or 1,500 automatic looms, with an average of one weaver to sixteen looms, and devoted wholly to one grade of cloth can produce an enormous quantity at a very low cost. The effect has hitherto been visible chiefly in the China trade, which is being captured from England. Next to India China was, and still is, Lancashire's best customer, but the Southern mills seem to have the game in their own hands; the U.S.A. exports to China rose (in thousands of yards) from 101,687 in 1900 to 326,419 in 1902. In India also they are beginning to tell. Of course the Southern mills compete with the Northern, and many of the latter have

been hard hit. Hence the great strike of 1904 at Fall River which ended in a reduction of wages. This competition is apparently leading, as it usually does, to differentiation of products and local specialisation. The Northern mills are aiming more at finer grades. The advantages possessed by the South in proximity to the cotton-fields are not always so great as might be supposed. In some districts the manufacturers have had a great grievance on account of the differential railway rates, which operate against them both in shipping goods at the nearest port and in obtaining cotton. It may be interesting to English manufacturers who complain of unfair railway rates to know that in South Carolina carriage from certain inland points to Charleston (the nearest port) has been charged 60 per cent. more than exactly the same carriage upon goods to be shipped through to New England. With regard to obtaining cotton it is to be noted that the mill districts consume a great deal more cotton that they raise and the deficiency has to be supplied from a distance. The question of supply is, indeed, more important than that of competition, as the trade in England has realised. The growth of American mills does not necessarily mean competition. Many of them cater for a new trade and produce nothing but a very coarse cloth for meat-packing. I heard of some projected mills to be built in Texas with a capital of over two millions sterling for this trade alone. But the supply is limited and the rapid increase of local manufactures has a very serious significance for other users. Already in 1900 the Southern States used more than one-third of their production and in 1903 their consumption had increased by 500,000 bales. The American mills do not exclusively use home-grown cotton, but in so far as they do not they are buyers in the world's market, and the effect on other consumers is the same. The need of fresh sources of supply is therefore obvious.

I end these descriptive chapters, as I began them, with cotton, the largest and most important of all single industries. It may be fittingly concluded by a statistical comparison between the three countries so far as information serves.

	Great Britain. (1902)	Germany. (1901)	United States. (N. 1900, S. 1903)
Mills	2,077	390	1,151
Spindles	49,727,107	8,434,601	21,212,827
Looms	719,398	211,818	488,760
Consumption (bales)	3,269,000	1,580,895	4,164,948
Hands employed	530,000	350,000	307,137
Exports of cotton cloth in thousands of yards	5,330,725		(1902) 525,517

The exports of Germany are only given in hundreds of kilos; in 1902 they were 443,566. The exports do not indicate the real position of Great Britain because they do not include yarn, of which 1,100,000,000 pounds were exported in 1901-02. A curious fact is that the United States manufactures more cotton than Great Britain but employs not many more than half the number of hands. This is due to the comparatively coarse character of the goods manufactured and the use of automatic looms. A further point of great interest is the relative number of men, women and children employed. The census gives the following:—

England and Wales.

	1881.	1891.	1901.
Total number employed	487,777	546,015	529,131
Males over 15	156,971	176,991	173,139
Females over 15	263,464	283,618	296,119
Children under 15	67,342	85,406	59,873

United States.

	1880.	1890.	1900.
Total number employed	172,544	218,876	297,929[1]
Males over 16	59,685	88,837	134,354
Females over 16	84,539	106,607	123,709
Children under 16	28,320	23,432	39,866

It will be noted that the proportion of men employed in the United States is very much larger than in England and that it has risen much more rapidly than the proportion of women. In the United States more men are being employed; in England more women. On the other hand the proportion of children has fallen considerably in England and risen in the States. The last change is wholly due to the Southern mills; in the Northern mills the proportion of children has diminished.

[1] This does not agree with the number previously given; it refers only to 1900, and does not include cotton small wares.

CHAPTER V.

FACTORY LAWS.

THE regulation of factories by law rests on the broad principle that it is the right and duty of the State to restrict the freedom of individual action in the interests of the community. The principle is unassailable ; it is the foundation of all law, and the only logical alternative is anarchy. Debate can therefore only arise upon the question of expediency. It has been held in the past, and is still nominally held by a few individuals, that all State interference in industrial matters is inexpedient, because it fetters free development under which things tend to "right themselves," if left alone, through the stress of competition. A manufacturer, for instance, who provides inferior conditions will be compelled to level up to the standard of his rivals, either because he cannot obtain hands to work under the conditions he provides or because their labour will be less efficient; and similarly with a nation. This is the argument of the survival of the fittest. Applied to trade and industry it is called "Manchesterism," but its only consistent supporters are the anarchists. Other nominal supporters only apply it so far as seems good to them; they draw an arbitrary line at a point which is usually determined by their own interest, though they like to refer it to some principle and to identify their own advantage with that of the community. As a matter of experience, it has generally been found that the fittest do not survive, or that the provision of superior factory conditions does not constitute fitness in competing industries. The disadvantage under which humane employers are placed in competing with less scrupulous rivals was one of the arguments for

State interference in the early days of English factory legislation, and the same thing may be seen to-day in the United States. The Southern States, which have no factory laws at all, and permit the employment of children under conditions forbidden elsewhere, are beating the New England States, in which more restriction is exercised. "In the long run," perhaps, this would not pay, and the law of survival would be vindicated; but the run is so very long that the public has no mind to wait for it, and not only sanctions, but demands, interference with practices which it believes to be injurious to the community.

It consequently happens that factory legislation always begins with the protection of the young, which is the most obviously expedient form of interference. The future of the race depends on their well-being, and they cannot protect themselves from injury; therefore, it is the clear duty of the State to protect them. It is curious that the need for protection was not recognised even in England, which led the way, until the rise of what is called the factory "system"—though it is not a system at all, but a spontaneous growth. Yet there is evidence that the conditions of child labour were worse under the previous "system" of home industries than in the factory. Nothing is more likely. Scores of writers have denounced, with tears of ink and blood, the horrors of the iniquitous factory "system," and have assumed or implied that until its appearance children lived a comparatively healthy and happy life at home. Singular delusion! If the children went into the factory it was because the parents took them, as they do to-day in South Carolina and Georgia, and in the factory their taskmasters were chiefly their parents, who brought the children to assist them. At home they exacted the same service, with even less restraint or control, and the atmosphere of the hovels and cellars in which they lived was at least as bad as that of the more spacious factory, and probably much worse. The historical assumption of the superior conditions enjoyed by the working man in the ante-factory days, when he owned his own tools—which forms the preamble of the socialist position—crumbles away when the facts are examined. What the factory did was to concentrate the evils of child labour, bring them into

the light and make them conspicuous. The importance of protecting the health of young workers was recognised in the north of England before the end of the eighteenth century. From the interesting researches into the beginnings of factory legislation by Miss Hutchins and Miss Harrison,[1] it appears that attention was first drawn to the subject by the occurrence of epidemic illness, the spread of which was attributed, no doubt rightly, to the aggregation of children in the mills under insanitary conditions; and general regulation by Act of Parliament was suggested. But the earliest legislation arose out of the Poor Law, and only affected those children for whom the State was responsible. In 1802 the "Health and Morals of Apprentices Act" was passed, by which the hours of working were limited to twelve, night work was gradually extinguished, and provision made for educating and clothing the apprentices.

That was the beginning of the factory laws. The general protection of children and limitation of the hours of their employment came many years later after much agitation. Subsequent legislation proceeded on the same principle, if in a blind fashion. It did not grant the demands of labour or of reformers, though influenced by them, but rather moved slowly from point to point as public opinion became convinced of the expediency of further measures. Women followed children as the next most obvious subjects of State solicitude in the interests of the community, and their protection entailed the general measure of fencing machinery. Then the special evils of some "dangerous trades" were brought forward, and finally general measures affecting health, the payment of wages and other matters were developed. Meantime the regulations for the protection of women and children were gradually strengthened, and provisions which originally applied to certain trades only were extended to others. So factory legislation was gradually evolved in this country. Others have followed and are still following the example; but coming later to the task, they have had at least the opportunity of approaching it in a more systematic fashion, and in some cases have done so.

[1] *A History of Factory Legislation.* By B. L. Hutchins and A. Harrison.

The history of factory legislation, then, presents a gradually developed scheme of protection for workers, beginning with those least able to protect themselves and going on to others, at the same time increasing in stringency and particularity. It is also the history of a conflict waged between humanitarian impulses and commercial interests. The chief motive power which has pushed forward fresh measures and eventually secured their enactment has been sympathy with those to be protected, and it has been opposed and checked by the interests of those against whom protection was demanded. Not uniformly, for manufacturers are not devoid of humanitarian impulses, and many have anticipated and exceeded the provisions of the law from Robert Owen down to the owners of model establishments in the present day. But, generally, commercial interests have opposed the measures urged by humanitarian impulses and have often succeeded in modifying or nullifying them. The appeal has lain to the great public, which has been dimly guided on the whole by regard for its own interests, which are those of the community, in deciding the issue. The most weighty consideration in Europe has undoubtedly been the health and safety of the workers. Where this can be plainly shown to be at stake the appeal rarely fails, whereas demands by workers which are of the nature of class demands, seldom succeed. The argument that anything which tends to the well-being of a large section of the population must benefit the whole community seems so self-evident that it is seldom formulated, and that the factory laws have contributed to the health and well-being of the workers cannot be denied. The conditions under which work is carried on have been revolutionised. Yet, by the irony of history, it is to-day, after sixty years or more of progressive improvement in the direction of health, that physical *deterioration* among the industrial population has become a burning question. Truly we see in a glass darkly.

The argument from health has occasionally been enforced by reference to industrial efficiency. It has been argued that good conditions of working promote good work ; and some employers have acted on it by voluntarily shortening hours, and by other measures for lightening the

toil or increasing the comfort of the employed. The results have justified their action, and I believe that, broadly, better conditions do tend to better work, and may be said to pay. But no absolute rule can be laid down. Industrial efficiency is not identical with commercial success, and economy effected by working longer hours, employing cheaper labour and providing inferior conditions may give an immediate advantage in some industries. This is, in fact, the argument for enforcing uniform conditions by legislation, and shutting off the downward tendency of competition, as against Manchesterism. Hence the constant demand for further regulations. "Sweating," it appears, pays well enough to be contagious, and it flourishes wherever allowed, forcing the standard down by competition. This fact, which is the strong point in the case for State interference and for a "common rule" fixing a minimum standard, implies that the provision of superior conditions, though it may tend to industrial efficiency, does or may involve some commercial disadvantage. That is equalised, of course, when all are brought under the same regulation; but each nation can only legislate for itself, and therefore the very argument for State interference at home is an argument for taking account of conditions prevailing elsewhere. Existing circumstances emphasise this consideration. As international competition becomes closer, the effect of unequal conditions tells more plainly, and that of unequal factory laws may prove a serious factor in determining commercial success or failure. The State has to decide what is best for the community at large, and must take cognisance of such conditions. It cannot assume, with one school, that restriction is absolutely good, and that the more there is of it the better; nor can it assume the contrary with another school. It has to strike a balance between conflicting interests and decide, for instance, whether the advantages of protecting a particular class outweigh the disadvantages of discouraging industrial enterprise or not. The more consciously and with the fuller knowledge it performs the task, the more likely it is to succeed.

With these preliminary considerations in mind, we can proceed to examine the existing regulations in England, Germany and certain American States, and to estimate

their bearing on the industrial situation. For this purpose it will be necessary to give a brief summary of the main provisions in each country relating to factories or workshops. Those dealing with mines, quarries, docks, etc., are omitted as outside the scope of the inquiry.

England.

Protected Persons.

Children.—The employment of children under twelve years of age is forbidden. Children between twelve and fourteen years may only be employed for half the day, in "morning and afternoon sets," or on alternate days if employed both morning and afternoon. This is to enable them to attend school, as required by the Education Acts. The hours are also regulated. They vary slightly in "textile" and "non-textile" factories, but in any case they lie between 6 A.M. and 8 P.M., which precludes night work. Continuous employment, without an interval of at least half an hour for a meal, must not exceed 4½ hours in a textile factory or 5 hours in a non-textile one. It is not clear from the complicated wording of the Act what the actual hours of work amount to, but apparently they are intended not to exceed 5½ a day in textile factories, and 6 a day in others. These regulations, with some minor ones, apply to children between twelve and fourteen years of age, who are technically termed "children"; but a child who has reached the age of thirteen may obtain a certificate of educational proficiency or of school attendance, according to a standard fixed by the Home Office, and is then considered a "young person," and exempt from the restrictions imposed on the employment of "children". Other children become "young persons" on reaching the age of fourteen. Neither "children" nor "young persons" under sixteen years of age may be employed for more than a week (extended to thirteen days in some circumstances) without a certificate of fitness granted, on personal examination, by a certifying surgeon, to the effect that the person named is of the specified age and not incapacitated by disease or bodily infirmity from working under the legal conditions. Parents

are expressly made responsible for the attendance at school of children employed in factories or workshops; one attendance a day is compulsory for those employed in morning or afternoon sets and two attendances for those employed on alternate days. Children must not be allowed to clean any machinery in motion, or any place under machinery, except overhead mill-gearing. Children may not be employed where dry-grinding of metals or the dipping of lucifer matches is carried on. These are the chief provisions for the special protection of children under the Act of 1901; but there are some others which apply to them in common with young persons and women.

The number of "children" under fourteen examined for employment in the United Kingdom in 1902 was 43,293; in 1897 it was 85,491.

Young persons are those from fourteen (or thirteen, with a special educational certificate) to eighteen years of age. For the most part the provisions for their protection are the same as for women, but there are a few special ones and some exceptions applying to them. As already stated, those under sixteen years of age are subject to the certificate of fitness required for children; and further, a factory inspector has the power of ordering discontinuance of employment in the case of a child or young person under sixteen on account of incapacity through disease or bodily infirmity. Young persons and children may not be employed where the silvering of mirrors or the process of making white lead is carried on. A similar prohibition with regard to the melting and annealing of glass applies to female young persons and children. The number of "young persons" examined for employment in 1902 was—thirteen to fourteen years, 89,137; fourteen to sixteen years, 248,637.

Women.—A woman or girl may not be employed within four weeks of her confinement. The hours of employment are thus regulated for women and young persons: (1) In textile factories—on ordinary week days, from 6 to 6 or from 7 to 7, with not less than 2 hours for meals; on Saturday, from 6 to 12 (if a whole hour allowed for meals), from 6 to 11.30 (if less than an hour allowed), or from 7 to 12.30; that is for manufacturing processes; employment

may be extended for an extra half-hour on Saturday for other purposes, which means cleaning-up. (2) In non-textile factories or workshops—on ordinary week days, from 6 to 6 or 7 to 7 or 8 to 8, with not less than 1½ hours for meals; on Saturday, from 6 to 2 or 7 to 3 or 8 to 4, with not less than half an hour for meals. In textile factories employment must not be continuous for more than 4½ hours, and in non-textile ones for more than 5 hours without at least half an hour's interval for meals.

These provisions are of great importance in competing industries. They practically limit the working week in all textile manufactures to 55 hours. There is no such limit in other countries, except in the state of New Jersey, and there it is not observed (see p. 45). Textile factories are any premises where mechanical power is employed in any process for the manufacture of "cotton, wool, hair, silk, flax, hemp, jute, tow, china-grass, cocoanut fibre or other like material". "Non-textile factories" are all other premises where mechanical power is employed in manufacture. Printing, bleaching and dyeing works count as textile factories with regard to hours, except that continuous employment may be for 5 instead of 4½ hours.

Women, young persons and children may not be employed on Sunday; and must have the following whole holidays allowed: Christmas Day, Good Friday and every Bank holiday (Easter Monday, Whit Monday, the first Monday in August, and the day after Christmas Day). They must have the times allowed for meals at the same hour must not be employed during those hours or allowed to remain in a room where a manufacturing process or handicraft is being carried on. They are further specially forbidden to take meals or to remain during meal-times in glass-works where mixing of materials, grinding, cutting or polishing is carried on, in lucifer match works, and in the dipping-house, drying-room or scouring-room of earthenware works. They must not be employed in wet-spinning rooms unless they are efficiently protected from being wetted. Girls under sixteen may not be employed where the making of bricks and tiles (other than ornamental) and the making or finishing of salt is carried on. Young persons must not be allowed to clean dangerous machinery in motion, and women

are subject to a certain amount of prohibition as to cleaning machinery.

The foregoing are the principal provisions for the protection of women and young persons. They are subject to certain exceptions. Continuous employment for 5 hours is allowed in winter and under conditions in elastic web, ribbon and trimming works, and the exceptions may be extended by the Home Office to other textile factories. Women are allowed, by special order, to work overtime under certain conditions in non-textile factories and workshops on the ground of press of work or the perishable nature of the materials; the total number of hours in a day allowed under an overtime order must not exceed twelve, and the period extends in no case later than 9 P.M.; overtime may not be worked more than three days in the week, or more than thirty days (on account of press of work) or fifty days (on account of perishable articles) in the year. Women, young persons and children may be employed for an extra half-hour on any day except Saturday, on account of an uncompleted process in bleaching and dyeing works, print works, also in iron mills, foundries and paper-mills in which male young persons are not employed during any part of the night; but the total number of hours in the week must not exceed those already laid down. Permission for similar overtime may be granted by special order to other factories. In certain trades the regulations regarding hours and meals are relaxed for boys (male young persons) above fourteen or sixteen years of age.

General Provisions.

Health is safeguarded by the following sanitary provisions, which apply to every factory except a "domestic" factory:—

(*a*) It must be kept in a cleanly state;

(*b*) It must be kept free from effluvia arising from any drain, water closet, earth closet, privy, urinal, or other nuisance;

(*c*) It must not be so over-crowded while work is carried on therein as to be dangerous or injurious to the health of the persons employed therein;

(*d*) It must be ventilated in such a manner as to render harmless, so far as is practicable, all the gases, vapours, dust or other impurities gener-

ated in the course of the manufacturing process or handicraft carried on therein, that may be injurious to health.

These general provisions are filled out by explicit rules.

To secure cleanliness all premises must be lime-washed or (if painted or varnished) washed with hot water and soap every fourteen months.

To secure freedom from insanitary effluvia the provisions of the Public Health Act of 1875 apply to factories, which may be proceeded against as a nuisance by the local health authority.

A standard of overcrowding is laid down in cubic space, namely, 250 cubic feet to every person, which is raised to 400 cubic feet during overtime. These standards may be raised by special order where artificial light is used other than electric or premises are used as a sleeping apartment. If the local authority fails to enforce the law relating to public health a factory inspector may be authorised to serve notice on the local council to do its duty, and in default may take proceedings himself and recover costs from the local council.

"Adequate measures must be taken for securing and maintaining a reasonable temperature in each room in which any person is employed," and the use of thermometers may be made compulsory by special order.

With regard to ventilation, a standard may be prescribed by special order for any class of factory.

Where floors are liable to be wetted "adequate means shall be provided for draining off the wet". "Every factory and workshop must be provided with sufficient and suitable accommodation in the way of sanitary conveniences," and with "proper separate accommodation for persons of each sex". What constitutes "sufficient and suitable" is laid down by special order.

Safety.—The regulations for securing safety are still more detailed than those relating to health. The following rules are laid down for the fencing of machinery :—

(*a*) Every hoist or teagle and every fly wheel directly connected with the steam or water or other mechanical power, whether in the engine house or not, and every part of any water wheel or engine worked by any such power, must be securely fenced ; and

(*b*) Every wheel-race not otherwise secured must be securely fenced close to the edge of the wheel-race ; and

(*c*) All dangerous parts of the machinery, and every part of the mill gearing, must either be securely fenced, or be in such position or of such construction as to be equally safe to every person employed or working in the factory as it would be if it were securely fenced; and

(*d*) All fencing must be constantly maintained in an efficient state while the parts required to be fenced are in motion, except where they are under repair or under examination in connection with repair, or are necessarily exposed for the purpose of cleaning or lubricating or for altering the gearing or arrangements of the parts of the machine.

Equally minute regulations are laid down with regard to steam boilers, self-acting machines, means of escape in case of fire, and doors. The means of escape from fire comes under the jurisdiction of the local authority. The use of dangerous machines and unhealthy or dangerous factories may be prohibited by an order of the justices on the complaint of an inspector.

Accidents must be reported forthwith to the inspector or the certifying surgeon, who must at once make an investigation. The Home Secretary has power to order a formal investigation when he thinks fit, and the persons appointed to hold it have the same powers as a court of law.

Notices.—No permission is required for starting a factory, but notice must be served on the district inspector within one month of occupation, giving name, address, nature of work and particulars of power employed.

In factories in which the hours and meal-times are regulated by law—that is, factories in which women, young persons or children are employed—a notice must be affixed specifying the hours of work, the times allowed for meals and whether the children are employed in morning and afternoon sets or on alternate days. In all factories the following must be affixed, "in such positions as to be easily read": an abstract of the Factory Act of 1901, name and address of the district inspector, also of the certifying surgeon, and a notice of the clock by which the time is kept.

In textile factories particulars of rates of wages paid for piece-work, and methods of computation, are to be posted up in an accessible position in addition to being delivered in writing to workers, and the same provision may be extended to other factories by special order.

In all factories a general register must be kept, con-

taining particulars of children and young persons employed, lime-washing, accidents and special exceptions; and the register is open to inspection by the certifying surgeon. Particulars out of it may be demanded by an inspector. Further, returns stating numbers employed, age, sex and occupation must be furnished periodically to the chief inspector.

Dangerous Trades—Notification.—Every medical practitioner is bound to notify to the factory department of the Home Office all cases of poisoning by lead, phosphorus, arsenic or mercury, and of anthrax, contracted in any factory, and occurring in his practice. Notice of similar cases must be sent from the factory to the district inspector and certifying surgeon.

Ventilation by Fan.—This provision is so important that it must be quoted in full:—

> If in a factory or workshop where grinding, glazing or polishing on a wheel, or any process is carried on by which dust or any gas, vapour or other impurity is generated and inhaled by the workers to an injurious extent, it appears to an inspector that such inhalation could be, to a great extent, prevented by the use of a fan or other mechanical means, the inspector may direct that a fan or other mechanical means of a proper construction for preventing such inhalation be provided within a reasonable time.

Lavatories and Meals.—Where lead, arsenic or "any other poisonous substance" is used, "suitable washing conveniences" must be provided. Where the work gives rise to poisonous dust or fumes of the kind just quoted, it is forbidden to take meals or to remain during meal-times in a room so affected.

The provisions for protecting women, young persons and children in dangerous trades have been already mentioned.

Special Rules.—These form a very important branch of factory legislation. The section giving power to make special regulations runs as follows:—

> Where the Secretary of State is satisfied that any manufacture, machinery, plant, process or description of manual labour, used in factories or workshops, is dangerous or injurious to health or dangerous to limb, either generally or in the case of women, children, or any other class of persons, he may certify that manufacture, machinery, plant, process or description of manual labour to be dangerous; and thereupon the Secretary of State may, subject to the provisions of this Act, make such regu-

lations as appear to him to be reasonably practicable, and to meet the necessity of the case.

The Act provides that notice of any proposed regulations must be given to the persons affected, who may formulate objections in writing. The Secretary of State "shall consider" any objection so made, and he "may, if he thinks fit, amend the draft regulations"; the amended draft to be dealt with in the same manner. If he does not amend or withdraw the draft regulation to which objection is made (unless it appears to him frivolous), he "shall, before making the regulations, direct an inquiry to be made". The inquiry is to be held in public, persons affected may appear in person or by counsel and witnesses may be examined on oath. Further, regulations so made must be laid before Parliament for forty days, and if either House resolves that they ought to be annulled, they are of no effect. Power is given by means of such regulations—

(*a*) To prohibit the employment of, or modify or limit the period of employment of, all persons or any class of persons in any manufacture, machinery, plant, process or description of manual labour certified to be dangerous; and

(*b*) To prohibit, limit or control the use of any material or process; and

(*c*) To modify or extend any special regulations for any class of factories or workshops.

These regulations are commonly called "special rules," and copies of any in force must be posted up where they can be easily read in any factories to which they apply. They are binding, under a penalty, both on employers and on employed.

The procedure quoted above is new since 1901. Previously by the Act of 1891 provision was made, in case of objection, for arbitration between the Home Office and the objectors, and workmen might be represented. Under this law special rules were made for twenty-three industries between 1892 and 1902, and arbitration took place in three cases. The last case was that of the pottery trade, which has been more regulated than any other, having been the subject of special rules in 1894, May, 1898, October, 1898, and 1901.

The industries at present regulated by special rules are —white lead, red and orange lead, yellow lead, lead smelt-

ing, paints and colours, and the extraction of arsenic, brass mixing and casting, enamelling of iron plates, enamelling of iron hollow ware, tinning and enamelling of hollow metal ware and cooking utensils, earthenware and china, transfer-making for earthenware and china (a colour process), explosives in which dinitrobenzole is used, chemicals, bichromate or chromate of potassium or sodium, flax-spinning and weaving, processes involving yellow chromate of lead, lucifer matches, vulcanising of india-rubber, electric accumulators, aerated waters, wool sorting, wool combing, dry hides and skins.

In addition to the foregoing list of specially regulated industries, separate provision is made by the law for tenement factories, cotton-cloth factories, bakehouses and laundries. The Cotton Cloth Factory Act, incorporated in the general act of 1901, is the most remarkable of these enactments. It lays down the most minute regulations with regard to the amount of humidity allowed in the air and the means of registering it, the source of the water used for humidification, the pipes used for the introduction of steam, the amount of ventilation, the outside of the roof and the provision of cloak-rooms. The clause relating to ventilation lays down the following standard of atmospheric purity: "During working hours in no part of the cotton cloth factory shall the proportion of carbonic acid (carbon dioxide) in the air be greater than nine volumes of carbonic acid to every 10,000 volumes of air".

Compensation for injury is regulated by separate laws, and will be discussed in a subsequent chapter.

Payment of Wages.

Truck is forbidden; wages must be paid in currency, and deductions are only allowed under specified conditions. They must be in accordance with a contract, must be reasonable, must not represent any profit to the employer, and particulars must be given in writing to the workman. Under these conditions deductions are allowed for fines, bad work and damaged goods, materials, machines and other things provided by an employer. Fines may only be imposed in respect of acts or omissions which cause, or are

likely to cause, loss or damage; they must be "fair and reasonable, having regard to all the circumstances of the case"; must not exceed the amount of damage caused; terms of the contract regarding fines must be posted up unless each contract is signed by the workmen; a register of deductions must be kept, in which particulars of fines are entered. Wages must not be paid in public-houses.

Inspection.

The administration of the law, except in so far as the local authority has jurisdiction in relation to public health and means of escape from fire, is entrusted to Government inspectors attached to the Factory Department of the Home Office. Their immediate superior is the Chief Inspector, who is responsible to the Home Secretary. The majority are locally stationed in charge of districts, but some having special duties are attached to the central office, and among the latter are eight female inspectors. The duty of the inspectors is to see that the law is carried out, and for that purpose they have power to enter factories and schools, to examine persons, registers, notices, etc. The number of inspectors and assistants for the United Kingdom (with a total of 252,853 "registered works," including 98,322 factories, and 140,710 workshops) in 1902 was 158. Out of this number there were five superintending inspectors having general functions, one specially concerned with dangerous trades, one medical inspector, one engineering adviser, one electrical inspector, one inspector of humid textile factories, eight "lady inspectors," and six inspectors of textile particulars. The cases of prosecution for violation of the law numbered 3,426, of which fifty-nine were dismissed; the total amount of fines inflicted and costs was £4,219. About two-thirds of the cases had reference to the employment of protected persons, and were almost entirely concerned with illegal hours and with certificates of fitness.

Certifying surgeons are medical practitioners residing in the locality. Their duties are to examine for fitness of employment and for trade poisoning, to investigate and report on accidents. They numbered 1,986 in 1902.

Penalties.

Infringement of the factory laws is punishable by fine; the maximum amount ranges from £1 to £10, according to the gravity of the offence. In case of death or injury arising from violation of the law, a fine up to £100 may be imposed. As a rule the person held responsible is the "occupier," but it is open to the occupier to prove that some other person was responsible for an offence charged, and, in respect of certain provisions, the "owner" is distinguished from the occupier. The "employer" does not appear to be recognised as such. The law, therefore, is strictly factory law, and takes the premises as the basis of its operation.

Germany.

The German factory laws form part of a systematic code for the regulation of industries, and are quite comparable with the English, though there are considerable differences between them. The word "*Fabrik*" is not defined, but it corresponds closely enough to "factory" for our purpose.

Protected Persons.

Children.—Children may not be employed under the age of thirteen, and only at that age if they are no longer liable to attend school, a condition which is decided by the school inspector. For such children—that is, from thirteen to fourteen years old—the hours are limited to 6 a day, with half an hour's interval for meals. In 1901 the total number of children under fourteen employed throughout the Empire in *Fabriken*, which includes somewhat more than factories in the English sense, was 9,454 (5,876 boys and 3,578 girls). Of these, 25·3 per cent. were employed in textiles, and this industry accounted for nearly half the girls; 16·3 per cent. (mostly boys) in the "stones and earth" industry; 15·1 per cent. in the industry of "food and drink"; 11·5 per cent. (chiefly boys) in the metal trades; 7·3 per cent. (chiefly boys) in wood; 6·9 per cent. (nearly all boys) in machinery. In the other trades the numbers were very

small. The home employment of younger children was brought under regulation by an Act passed in 1903, but the details do not concern us. The German educational system does not recognise "half-timers," but, as a matter of fact, all the schooling required by law in lower grade primary schools is often given in the morning, leaving the afternoons free, and both boys and girls of school age are employed in the afternoons, the former generally as errand boys, the latter as nurses.

Young Persons.—After fourteen children are exempt from school, except in so far as boys may be liable to attend continuation classes for a few hours a week in those places where continuation schools are compulsory. At fourteen, therefore, boys and girls may and do go into the factory in large numbers; but up to sixteen they are called "young persons" or (together with those under fourteen) "youthful workers," and are subject to special regulations. The number of "young persons" employed in 1901 was 335,912. They may not be employed for more than 10 hours a day, nor on Sunday and holidays, nor during the hours appointed for religious instruction, for confirmation, confession and communion, nor in certain specified trades; their working day must not begin earlier than 5.30 A.M. nor continue later than 8.30 P.M.; they must have an hour's pause at midday and half an hour both in the forenoon and afternoon, unless their working day is not more than 8 hours and no continuous spell exceeds 4 hours; during the pauses any participation in the work of the factory is forbidden, and even to remain in the rooms is only allowed when their own department of the work is brought to a complete standstill or it is impossible for them to go elsewhere. These regulations apply to both girls and boys under sixteen; after that they cease to be "youthful workers". After eighteen boys, other than regular apprentices, are under no special protection, except that all minors (under twenty-one) must be provided with a "work book" or register containing name, age, birthplace, nature of employment, date of engagement, discharge and other particulars. In some employments wage books may also be made compulsory; details of wages and other conditions are entered in these books. In some parts of Germany

attendance at continuation schools is compulsory from fourteen to sixteen, seventeen or eighteen years of age; employers must grant leave of absence for the required school hours to boys so liable.

Women.—Female hands must not be employed between 8.30 P.M. and 5.30 A.M.; on Saturday and on the eve of a holy day they must not be employed after 5.30 P.M. Their daily hours of employment must not exceed 11 on ordinary days or 10 on Saturday and on the eve of a holy day. They must have at least an hour's pause at midday, and those who have a household to look after may claim an extra half-hour. Employment is forbidden to mothers for four weeks after confinement, and for a further fortnight unless they have a doctor's certificate. The number of women over sixteen employed in 1901 was 847,386, of whom 310,211 were under twenty-one.

Wherever women and youthful workers are employed in a factory the employer must give written notice to the police, stating the nature of the employment and the hours of work.

The foregoing regulations are of general application. There are, in addition, special rules for the protection of women and youthful workers in the following manufactures: Matches, lead, horse-hair, brushes, cigars, accumulators, zinc, glass, rubber, spinning and some preparatory textile processes, basic slag, preserves, chicory, sugar, milk, metal rolling and forging, and pottery.

Overtime is allowed under press of work to women over sixteen—namely till 10 P.M. on ordinary week days, but not to exceed 13 hours a day, and only for forty days in the year. In certain occupations those who have no household duties may work overtime on Saturday to 8 P.M.

General Regulations.

Holidays.—The following holidays are secured: Sunday, New Year's Day, Easter Monday, Ascension Day, Whit Monday, Repentance Day (middle of November), Christmas Day, and the day after. Good Friday is also generally observed; and in places where the population is preponderatingly Catholic, as in the Rhine Province, several

additional holidays are kept on important Church festivals. The statutory time allowed on these holidays is—each Sunday and festival day not less than twenty-four hours; if two come consecutively, thirty-six hours; Christmas, Easter and Whitsuntide, forty-eight hours; the time is reckoned from twelve o'clock midnight. It appears, therefore, that factory hands are fairly well off for holidays.

Wages.—Truck is forbidden, wages must be paid in currency, and not on Sunday. Fines are permitted, but must not exceed half the average earnings, except in case of acts against fellow-workmen, of offences against morality, or against regulations for the maintenance of order and of security, and for the fulfilment of statutory provisions. In these cases fines may be imposed to the full extent of the average earnings. All fines must be applied to the benefit of the factory workers, and generally go to the sick fund; but this does not affect the right of the employer to obtain compensation for damage. Particulars of fines must be entered in a book, which is open to inspection by a Government officer.

Factory Rules.—Every factory must have a set of rules hung up in an accessible place in each department, stating the hours of work, with the regular intervals for meals, the time and manner of paying wages, the length of notice required for terminating employment and the conditions which render notice unnecessary, and particulars of punishments, including fines, and the objects to which they will be applied. Punishments which wound self-respect or offend against morality are inadmissible. The factory rules are legally binding on employer and employed; but before they are issued opportunity must be given to adult workers to express their views; and the rules, with any written objections, must be submitted within three days of issue to the factory inspector, who may order amendments if the rules are not in accordance with the law or with special regulations. Punishments not in the rules cannot be imposed, nor can other grounds of dismissal be included in the contract.

Notice of termination of employment is usually a fortnight; but it may be dispensed with on the part of an employer on the following grounds: false representations,

theft and other criminal acts, leaving work without permission or refusing to fulfil the contract, carrying fire or lights about contrary to orders, acts of violence or gross abuse directed against employer, his representative or family, wilful damage, inducing members of employer's family or his representative or fellow-workers to behave in a manner contrary to law or morality, inability to continue work, or an alarming disease. Similarly it may be dispensed with by workers on corresponding grounds, and also for non-payment of wages in the prescribed manner, neglect to provide sufficient work for piece-workers, unjustifiable prejudice, danger to life and health in the employment which could not be inferred from the contract.

The provision of factory rules containing the foregoing and other particulars, legally binding on employers and employed, is a characteristically German institution. It is in accordance with that respect for law and order which is such a marked feature of German life, and contributes materially, I have no doubt, to the smooth working of the establishment. The relations, rights and obligations of work-giver and work-taker—to use the excellent German terms—are publicly defined and guaranteed by the law. This conduces to tranquillity, and renders vague talk about "rights" palpably futile. The law cannot be changed by individual bullying on either side. The rate of wages is not included in the factory rules.

Factory Premises.

Before any standing industry can be started it is necessary to give notice to the local authority; and special permission is required for certain concerns which may give rise to a public nuisance or danger. These include the manufacture of explosives, gas, petroleum, coke, coal-tar bricks, chemicals of all kinds, soap, cellulose and the like and a number of other establishments, such as blast furnaces, foundries, forges, tinning and galvanising works. Similar permission is required for the erection of boilers, and specially noisy works may be forbidden near churches public buildings and hospitals.

Health and Safety.—Apart from these particular provisions, factories are subject to the following general law:—

Owners are bound to arrange and maintain work-rooms, appliances, machinery and tools, and to regulate the working in such a way as to protect the workers from dangers to life and health so far as the nature of the business allows.

In particular, attention must be paid to the provision of sufficient light, ample air space and ventilation, and to the removal of dust arising from the work, of vapours and gases thereby developed, and of refuse incidental to it.

Similarly, those arrangements must be provided which are necessary for the protection of workers against dangerous contact with machinery or parts of machinery, or against other dangers lying in the nature of the work-place or the working, and particularly against the dangers which might arise from fire.

Finally, such rules must be issued with regard to the regulation of the business and the conduct of the workers as are called for to secure freedom from danger.

This section is followed by a similar one in general terms requiring the provision of arrangements for the preservation of morality and decency. It mentions the separation of the sexes, particularly in reference to washing and cloak-rooms, and lays stress on the provision of adequate sanitary conveniences.

Further, in places where persons under eighteen are employed, employers are bound to make such special arrangements with regard to health and morality as their age requires.

Those general provisions of the law may be amplified by the local factory authority, which has power to order specific measures for their fulfilment in the case of individual factories.

Dangerous Trades.

Special regulations for the efficient enforcement of the foregoing general ones may be issued for particular industries by the Bundesrath (Federal Council of the Empire) or by the separate Governments or by the police. A number of trades have been so regulated, largely in the interests of women and youthful workers, as already detailed. The trades specially regulated on general grounds are (1) for the Empire—flour mills, match factories, bakeries, cigar factories, printing works and type-foundries, zinc works, lead, colour and sugar of lead works, accumulators of lead and lead compounds, bichromates, basic slag mills, horsehair spinning, bristle and hair dressing, brush making; (2)

for Prussia only—spinning, mirror silvering, water and half-water gas, electrical installations, hare fur dressing, lead works; for Bavaria—mirror silvering; for Saxony—lifts and lead; for Württemberg—tanning. There is no system of notifying cases of trade poisoning or disease. Compensation for injury will be discussed under the heading of Insurance.

Inspection.

The supervision of factories is entrusted to special inspectors, as in England. They are locally distributed in industrial districts, and reside near their work. It is their duty to visit factories and see that the provisions of the law are carried out. Factories in which women and youthful workers are employed must, in Prussia, be visited once every six months. A few female inspectors have been appointed in recent years for certain localities. The immediate superiors of the inspectors are special councillors attached to the provincial Government offices. The official head of the department for the empire is the German Minister of the Interior; for Prussia it is the Minister of Commerce. The administration of the law, however, is mainly in the hands of the police or local executive, which has large powers.

Penalties.

The penalties for infringement are fines similar in amount to those in England. They range from £1 to £100. In the case of graver offences imprisonment up to six months may be imposed in default of payment. The person held responsible is usually called the "undertaker," but sometimes the term "work-giver," which is the ordinary German equivalent of "employer," is used. The legislature has primarily regard to the carrying on of a business, that is to say, to the dynamic rather than the static conditions, as in England.

The foregoing summaries show the general likeness between the English and German codes, and also bring out some of the points of difference.

The first to be noticed is the age limit for children, which is one year later in Germany, namely thirteen instead

of twelve. The number of children employed under fourteen is consequently very much greater in England than in Germany, and this constitutes an advantage to employers in two ways—economy in wages and superior skill in manual manipulation acquired by beginning at an early age. The undoubtedly superior skill of English operatives in some textile processes is chiefly due to their having begun younger and indeed at an age earlier than the present law permits.

On the other hand, the provisions for the protection of children and those for "young persons" and women are more stringent and complete in England. There is, first, the examination for fitness of employment applied to those under sixteen; then the age of protection for young persons extends to eighteen instead of sixteen. Further, the hours are shorter; the legal day's work begins half an hour later and ends half an hour earlier; the hours for women on ordinary week-days are confined, in textile factories, to 10 instead of 11, and on Saturday to $5\frac{1}{2}$ instead of 10. The universal half-holiday on Saturday in England is a very important institution. It is a great boon to the work-people and is not grudged by employers, but it certainly prevents them from running their machinery so long as their competitors; and they have found the curtailment of an hour, effected by the latest legislation, a costly restriction. The regulations for women and young persons in dangerous trades are also more stringent in England. The only points in which German law imposes greater restrictions are in regard to confinements and evening continuation schools.

With regard to general provisions, the English law is also considerably more stringent, save on two or three points. These are that no permission is required to start a factory, that the statutory provision for holidays does not apply to adult males, and that "factory rules" are not imposed, though some of the notices required to be posted up are of the same nature. In almost all other respects the English law is both more detailed and more extended in its operation. The difference is curious, and reverses the usual order of things. Germany is pre-eminently the country of the martinet; stricter rules are laid down for the ordering of life, both in public and in private, than

elsewhere. There is truth in the common criticism that people are more "policed" and "dragooned" there, though the working is less irksome in actual life than is commonly supposed. In England, on the contrary, there is in general less interference and more freedom of action under the law than in any other ordered community. But in regard to factory legislation the position is reversed. The English provisions are more minute, more rigid and more precise than elsewhere. The German law, while keeping the same objects in view—and indeed more fully, by the inclusion, for instance, of good light, which is ignored by the English code—is characterised by greater elasticity and a comparative absence of minute, hard and fast requirements. To exhibit this difference fully it would be necessary to enter into much greater detail than is practicable here; but a comparison between the provisions for health and safety in the two countries quoted above will sufficiently illustrate the point. In Germany much more is left to the discretion of the executive; the objects are laid down, but more elasticity is allowed in adjusting the means to particular circumstances.

Now, it cannot be doubted that this course has been pursued deliberately by the legislature, which has fully recognised the objects of regulation and the duty of securing them, and has had the English example in view. It has clearly refrained from imposing rigid requirements on manufacturers of set purpose, because in some respects it has not hesitated to go beyond the English law, notably in regard to the age limit of children. In other words, it has kept in view the need of encouraging industrial enterprise in the interests of the community as well as that of protecting the workers, and it has endeavoured to hold the balance between these duties. This is part of a general policy. The factory laws are an example of the extreme care which is taken in Germany by the legislature and the Government to assist industrial enterprise as much as possible and to hinder it as little as is compatible with other duties. The English factory laws are an illustration of our practice of dealing with things as they arise without any plan or conscious aim beyond the immediate point, which is settled by a trial of strength between conflicting interests.

Sometimes the English plan works better, and in the present case the results are superior in some respects; but, on the whole, I think it is not so. The test of success is the attainment of the object, which is here to protect the workpeople without discouraging enterprise; and if the whole German scheme, which includes that most important complement, the State Insurance system, be taken into account, there is, in my opinion, no doubt that it does attain the object more satisfactorily than our own. The workmen are better cared for, and the manufacturers are most certainly less hindered.

The State Insurance will be discussed in a subsequent chapter. Without it the case would, perhaps, stand otherwise. If factory laws alone be taken the advantage lies, on the whole, with the English code, by reason of the superior protection given to women and young persons and in dangerous trades. The absence of notification of trade poisoning in Germany is a notable defect, for without notification it is impossible to say with any precision where and to what extent protection is needed, and how far the measures taken are effectual.

On the other hand, the English laws do unquestionably impose a substantial handicap on competing industries. They need not; it would be possible to obtain all the benefits that are now obtained, and more, without any such drawback. What English manufacturers complain of, and German ones do not, is a fussy and vexatious interference based on a pedantic application of the letter of the law without regard to the circumstances. Such complaints are by no means universal, but in some districts they are common. It is largely a question of administration. Where the executive officers are reasonable and judicious, there are no complaints; but if an officer happens to lack those qualities, the law in some respects lends itself, by minute specification, to a needlessly harassing interpretation. No doubt it is a difficult matter; for regulations, if they are to be effective, must be so framed as to exclude evasion by the less scrupulous manufacturers. But it is not manufacturers only who think our law too rigid. I have met with a still more decided opinion from a leading trade-unionist in one of our greatest industrial towns, a very thoughtful

man. "The factory regulations," he said, "are too severe. We are moving in the direction of over-inspection." In particular he thought that "too much attention is paid to medical opinion". He saw that ideal sanitary conditions might be too dearly bought. I should not say myself that too much attention is paid to medical opinion, but rather that medical opinion is too often based on inadequate knowledge.[1]

A striking case in point is the Cotton Cloth Factory Act. I have quoted above the regulation laying down a standard of atmospheric purity for cotton cloth factories using artificial humidity, which was based on "expert" recommendations. The manufacturers assented, but found on trial that the standard was impracticable and based on erroneous assumptions regarding the normal composition of the air. The experts took 4 volumes of carbonic acid per 10,000 as the standard of the outer air, and allowing 5 for the inside of the factory, reached a maximum of 9. But it was found that the outside air sometimes contains as much as 7 volumes, only leaving a margin of 2 for the inside of the building. The question was referred to a departmental committee for experimental investigation, and the report published in 1903 bore out the contention of the manufacturers. The regulation in force requires that "during working hours in no part of the cotton cloth factory shall the proportion of carbonic acid be greater than 9 volumes per 10,000". That is to say, an inspector can come at any time, whether artificial light is burning or not, and no matter what the external atmosphere may be, and take a sample of air at any point in the building, and if it contains more than 9 volumes the manufacturer is liable to prosecution and fine. The Committee found the regulation too stringent and recommended modification in regard to every single point. The regulation they suggested is—

> That the proportion of carbonic acid in the air at about the breathing level and away from the immediate neighbourhood of any special source of contamination, such as a person or light, shall not (except on very foggy days, when no tests should be made, on account of the vitiated

[1] This tendency has been modified in recent years by the appointment of a special medical inspector possessing competent knowledge and able to check the indiscreet zeal of less instructed officers.

state of the outside air) rise during daylight, or after dark when only electric light is used, beyond 12 volumes of carbonic acid per 10,000 of air, and that when gas or oil is used for lighting the proportion shall not exceed 20 volumes after dark, or before the first hour after daylight.[1]

In this careful recommendation, made after special investigation, foggy days are excluded, the point at which air may be taken is limited, daylight and artificial light are differentiated, and the standard is raised from 9 to 12 volumes in the one case and to 20 in the other. It is intended for general application, but the report expressly recommends that cotton cloth factories should have the option of adopting it. As a matter of fact, the statutory regulation has not been vexatiously enforced, but the hard-and-fast rule which it lays down was evidently the outcome of insufficient knowledge, and cannot be sustained. It hung a harassing possibility over the heads of manufacturers, rendered their position insecure, and discouraged enterprise. A marked revival has taken place since this issue of the report just quoted, in the face of which strict enforcement of the Act can hardly be attempted, and is, therefore, less feared.

A similar case is that of a proposed standard of solubility for lead glazes, which it was sought to impose on the pottery trade in 1901, in response to a popular agitation, and on the strength of "expert" opinion. In this instance the manufacturers objected and brought the matter to arbitration. The evidence for the proposed standard fell to pieces, and it has not been imposed.

These two cases illustrate the tendency referred to by the trade-unionist quoted above. Both the trades concerned are exposed to the severest competition from foreign countries in which no such restrictions are imposed, and their capacity to bear unequal interference requires most careful consideration. A judicious attitude on the part of the authorities is the more necessary because, while competition has greatly increased, a kind of passion for interference has grown up and is fostered by popular agitation. It is not confined to considerations of health and safety, but is prepared to regulate the lives of others according to a

[1] Departmental Committee on the Ventilation of Factories and Workshops. First Report. 1903.

wholly arbitrary standard. Thus it has been urged that the occupation of sifting dust and refuse should be prohibited to women; not on the ground of health, for it is admitted to be healthy; nor on behalf of the women, who like it so much that they decline other work when offered in its stead; but simply because it is, in the eyes of persons belonging to a different social sphere, a low and dirty occupation. There are social "reformers" in England who regard manufacturers and industrial occupations very much as extreme teetotallers regard publicans and the liquor trade. They see nothing but what is bad in them and would reform them out of existence. This spirit has left its mark on the regulation of factories. It would have had a more serious influence, were it not for the judicious manner in which the executive officers, as a rule, discharge their duties.

These observations must not be taken to imply more than they contain. I am here discussing the facts and am not concerned to make suggestions. Factory legislation has had somewhat different conditions to deal with in the two countries. In England the extensive development of manufacturing industries came much earlier than in Germany, and therefore we have a larger proportion of old-fashioned establishments, which do not come up to modern ideas. Moreover, our workpeople are extremely conservative in their ways, and far from docile. It may well be, therefore, that greater strictness is necessary to produce the same result. And again, our industries have not required the careful nursing which has been necessary in Germany. These considerations explain the different spirit in which the problem has been approached here and there. It is a very shallow view which assumes that what suits one country will suit another. Nevertheless, the fact remains that our laws do impose disabilities on manufacturing enterprise, which are avoided in Germany.

America.[1]

Factory legislation in the United States comes under the head of "Labour Laws," which, however, deal with many

[1] Changes in the law are being made year by year in one or another State, and it is possible that by the time this appears some details may be out of date.

other matters. Each State has its own code. There are United States "labour laws," but they are only concerned with such matters as the *status* of seamen, inspection of steam vessels, immigration, alien labour, trusts, coal-mines and Government departments. The laws relating to factories in the different States vary within very wide limits. The best way to give a clear idea of their scope will be to take three States as fairly representative of different classes—namely, Massachusetts, Pennsylvania and South Carolina.

Massachusetts.

Massachusetts has in some respects the most "advanced" factory laws of all the American States.

Protected Persons.

Children.—Children under fourteen may not be employed "in any factory, workshop or mercantile establishment"; nor may they be employed at all for wages during school hours or before 6 A.M. or after 7 P.M. Employment of children under sixteen "in a factory, workshop or mercantile establishment" is only allowed under the condition of an age and schooling certificate, granted by the superintendent of schools; a list of such children must be "conspicuously posted" near the principal entrance of the building in which they are employed, and a list of those of them who cannot read and write must be sent to the superintendent of schools. The granting of an age and schooling certificate is safeguarded by elaborate rules, and "truant officers" have the right to visit establishments, inspect the list of minors, see that the law is obeyed, and report breaches. Further, illiterate minors over fourteen years of age may not be employed in any place where a public evening school is maintained, unless they are regular attendants at the school or are excused by a medical certificate on the ground that school attendance in addition to daily labour would be prejudicial to health.

The tenour of these provisions seems to show that the primary object of restricting child labour is education rather than health.

A section providing that children under fourteen must not be allowed to clean machinery in motion in a factory, appears to be covered by that already quoted prohibiting their employment.

Children under sixteen must not be placed in charge of an elevator, nor persons under eighteen in charge of one running at a speed of more than 100 feet a minute. Minors under eighteen must not be employed in the manufacture of an acid which the State Board of Health may determine to be dangerous or injurious to health.

Women and Young Persons.—Children under eighteen and women may not be employed for more than 10 hours a day, or 58 hours a week. Minors and women may not be employed between 10 P.M. and 6 A.M. "Young persons" (that is, between fourteen and eighteen years of age) and women shall be allowed their meals at the same hour, and shall not be employed for more than 6 hours at one time without an interval of at least half an hour for a meal. These provisions do not apply to iron works, glass works, paper mills, letterpress establishments, print works, bleaching and dyeing works; and they are subject to some other slight qualifications. Deductions may not be made from the wages of minors and women, who are paid by the day or hour, for time during which machinery is stopped, if they remain in the factory. "Suitable seats" must be provided for females employed in "any manufacturing, mechanical or mercantile establishment".

General Provisions.

Health.

Every factory in which five or more persons are employed, and every factory, workshop, mercantile or other establishment, in which two or more children under eighteen years of age, or women are employed, shall be kept clean and free from effluvia arising from any drain, privy or nuisance, and shall be provided, within reasonable access, with a sufficient number of proper water-closets, earth-closets or privies; and wherever two or more males, and two or more females are employed together, a sufficient number of separate water-closets, earth-closets or privies shall be provided for the use of each sex.

In securing sanitary conditions, it is provided that the local sanitary authority has similar jurisdiction under the

public health law to that in England, and is therefore auxiliary to the factory law executive.

Ventilation is provided for as follows :—

> A factory in which five or more persons, and a workshop in which five or more women or young persons are employed, shall, while work is carried on therein, be so ventilated that the air shall not become so impure as to be injurious to the health of the persons employed therein, and so that all gases, vapours, dust or other impurities injurious to health, which are generated in the course of the manufacturing process or handicraft carried on therein, shall, so far as practicable, be rendered harmless.

The wording of the latter part is almost identical with that of the English section, but no standard of overcrowding or of ventilation is laid down.

Provision for the removal of injurious dust is also made in terms almost identical with the English Act quoted above, but there is one important addition. The English section says :—

> If it appears to an inspector that such inhalation could be to a great extent prevented by the use of a fan . . .

The Massachusetts section says :—

> If it appears to an inspector that such inhalation would be substantially diminished *without unreasonable expense* by the use of a fan . . .

The proviso of reasonable expense is very significant. The question has often arisen in England, notably in connection with small pottery works. Some of these have no mechanical power on the premises, and no room for an engine. In order to comply with an order to provide fans under such conditions it would be necessary to put in an engine and rebuild the factory. Nothing excites more indignation in the stern reformer than leniency in these cases. It is, therefore, worth noting that the Massachusetts law expressly affords them protection.

Safety.—Plans of buildings more than two stories in height must be deposited with the district inspector and passed by him. Fire escapes must be provided for all such buildings. Steam boilers must be reported to the police and be submitted to inspection. There must be communication between the engine-room and every room in which machinery is worked by steam. Doors must not be fas-

tened so as to prevent free egress. Hatchways, etc., must be protected by trap-doors or self-closing hatches. The fencing of machinery is thus provided for :—

> The belting, shafting, gearing and drums of all factories, if so placed as in the opinion of the inspectors of factories and public buildings to be dangerous to employees thereon while engaged in their ordinary duties shall be as far as practicable securely guarded.

Self-acting mules must not be allowed to travel within twelve inches of any fixed structure. (In the English law the distance is eighteen inches.) Fatal and serious accidents must be reported to the police.

Wages.—Wages must be paid weekly. Those of weavers are protected by special regulations ; deductions may only be made for imperfections in the work and under certain conditions ; the imperfections must be pointed out and the scale of deductions must be agreed upon beforehand ; specifications of work to be done and price paid must accompany the material given out for each piece of work. Similar specifications must be posted up in all textile factories in every room in which piece-work is done.

Dangerous trades are apparently not recognised, but there are special regulations for tailoring workshops, and by an Act passed in 1903 the provision of hoods and fans for protecting workers from the injurious dust of emery wheels was made compulsory.

Hours of Labour.—" Nine hours shall constitute a day's work for all labourers, workmen and mechanics who are employed by or on behalf of the Commonwealth or of any county, city or town therein." Cities or towns may adopt eight hours for their own workmen by public vote.

Holidays.—The legal holidays are seven in the year, namely : Thanksgiving, Fast and Christmas Days, 22nd February, 30th May, 4th July and the first Monday in September (Labour Day).

Inspection.—The inspection of factories is associated with that of public buildings, and is entrusted to a special branch of the police, consisting (Act of 1894) of twenty-four male and two female inspectors.

Penalties for breaking the law are fines varying from $10 to $300.

Pennsylvania.

The State of Pennsylvania has a "Factory Law," passed in 1901 and entitled "An Act to regulate the employment and provide for the health and safety of men, women and children in manufacturing establishments, mercantile industries, laundries, renovating works or printing offices. . . ."

The main provisions are as follows:—

1. Minors and women may not be employed more than 12 hours a day or 60 hours a week.

2. Children under thirteen may not be employed in the establishments mentioned.

3. Children between thirteen and sixteen may not be employed without an affidavit made by parent or guardian, or failing them by the child itself, stating age, date and place of birth, and kept on file.

4. Children must be examined as to their ability to read and write English by persons authorised to administer oaths; and if a child is unable to read and write or has not attended school as required by law or is under thirteen years of age, a certificate must not be issued.

5. A printed notice must be posted up in a conspicuous place in every work-room, stating the daily hours of work. Where children under sixteen are employed a list of names and ages must be similarly posted up.

6. Suitable seats must be provided for girls and women.

7. Hoisting shafts must be "properly and substantially enclosed or secured". Elevator ways must be provided with traps or automatic gates.

8. Where dangerous machinery is in use automatic shifters must be provided for throwing on or off belts or pulleys. "All gearing and belting shall be provided with proper safeguards." Children under sixteen must not be allowed to clean machinery in motion. Children under fourteen must not operate or have the care of an elevator.

9. All accidents or serious injuries must be reported to he factory inspector by the owner or superintendent within twenty-four hours.

10. Proper wash and dressing-rooms and water-closets must be provided; they must be entirely separate for

males and females, must be properly screened and ventilated and kept in a clean condition.

11. Not less than forty-five minutes shall be allowed for the noonday meal, but special permits for a shorter meal-time may be issued by the factory inspector.

12. The factory inspector has power to order alterations if he finds "the heating, lighting, ventilation or sanitary arrangement such as to be injurious to health or dangerous to employees, and not sufficiently guarded, or that the vats, pans or structures filled with molten metal or hot liquid are not surrounded with proper safeguards for preventing accident or injury to those employed at or near them; or if the means of exit in the case of panic or sudden alarm are not sufficient".

13. It is the duty of the factory inspector to inspect the means of escape from fire and to compel owners of buildings to comply with the law in this respect.

14. Owners of steam boilers must report their condition from time to time to the factory inspector, who has power to enter and inspect boilers, and if they are found to be dangerous to notify the owners, who must immediately cease the use of such boilers until placed in safe condition.

15. The factory inspector is authorised to appoint twenty-five deputies, five of whom shall be women.

16. Violation is punishable by a fine of not more than $500.

South Carolina.

The only laws affecting factories in this important manufacturing State relate to the employment of children and the hours of labour.

Previous to 1903 the employment of children was subject to no age limit; but in that year an Act was passed which laid down a minimum age of ten years from May, 1903, eleven years from May, 1904, and twelve years from May, 1905. Orphans and children of a widowed mother, or totally disabled father, dependent upon their own labour, are exempted. The same Act prohibits the employment of children under twelve between 8 P.M. and 6 A.M., but allows an extra hour up to 9 P.M., to make up for lost time caused by accidental stoppage.

With regard to the hours of labour the Revised Statutes of 1893 provide that:—

> Eleven hours shall constitute a day's work in all cotton and woollen manufacturing establishments in the State, for all operatives and employees, except engineers, firemen, watchmen, mechanics, teamsters, yard employees and clerical force.

This is subject to a *proviso* permitting overtime to make up for accidental stoppages.

Sunday labour is forbidden.

The foregoing summaries clearly show two things: (1) that the factory laws differ widely in the different American States; (2) that in none are they at all comparable with those of England and Germany. The other States more or less closely resemble one or other of the three types selected. A few have laws very similar to those of Massachusetts, and some of the middle States have more complete provisions with regard to safety, while at the other end of the scale some of the Southern States, in which manufacturing industries are extensively carried on, have even fewer restrictions than South Carolina, which has at least adopted an age limit for children. Others have none, and a proposal, recently made, to introduce a limit in Georgia was deliberately rejected. If factory legislation is a mark of "advanced" civilisation—which can hardly be denied — then the United States is far behind Europe. If, again, legal restrictions impose some commercial disadvantages on competitors in the industrial struggle—which also cannot be denied as a general proposition — then European, and particularly English, manufacturers are placed at a substantial disadvantage in competing with American rivals. Similarly, some States in America are placed at a disadvantage with regard to others. The great development of the cotton manufacturing industry of late years in the Southern States as compared with New England is due more to this cause than to proximity to the cotton fields; for the latter advantage is largely neutralised by the system of rates imposed by the railroads.

There is, speaking generally, much greater reluctance to interfere with enterprise and much less enthusiasm for

interference in America than in Europe. The legal right of the State to regulate the hours of adults has been challenged as an infringement of the Constitution, and in some cases such regulation has been declared unconstitutional by the Courts; but as a rule it has been sustained. The questions in relation to adult women came before the Superior Court of Pennsylvania so late as 1900. The argument was that the limitation of hours to twelve a day and sixty a week for an adult woman was contrary to the Constitution of the State of Pennsylvania as an "unjust interference with her right of acquiring and possessing property and pursuing her own happiness," and also contrary to the Constitution of the United States as "an attempt to deprive her of liberty and property without due course of law". The Court sustained the legality of the challenged provision; and undoubtedly the pressure of public opinion is tending in the direction of increased protection to workers after the European model.[1] Some States have extremely elaborate codes in relation to mining, and fresh laws extending and strengthening the control of factory conditions are being constantly passed in one State or another. America is "coming along," though slowly, reluctantly and with even less sense of system or principle than England.

The one marked exception to this attitude is the legislation for the protection of children in regard to age of employment. The age limit of fourteen years has been adopted in the following States, in addition to Massachusetts, which was the pioneer: Connecticut, Illinois, Indiana, Kentucky, Louisiana (girls), Maryland (subject to exceptions), Michigan, Minnesota, Missouri, New Jersey New York, Ohio, Oregon, Tennessee, Washington and Wisconsin. This is one year later than in Germany and two years later than in England. In Pennsylvania the limit is thirteen; in California, Rhode Island, Maine, New Hampshire and some of the Southern States it is twelve. We see, there-

[1] An extremely important decision was rendered by the United States Supreme Court on 17th April, 1905, in the case of Lochner *v.* People of the State of New York. That state has a law limiting the hours of bakers to ten a day and sixty a week. Five judges to four decided that the law was a violation of the Federal Constitution by interfering with freedom of contract and was therefore void.

fore, that, in spite of Georgia, which has no limit at all, and some States which have ten years, America is on the whole decidedly in advance of Europe on this point; and the fact is significant. The history of the legislation, its form and the subsidiary provisions with which it is accompanied, show that the object in view is essentially to secure schooling for the children. The fact testifies to the marked concern about schooling which prevails in most of the States, and is proved in many other ways.

In the general protection of children Illinois is in advance of all other States; employment under sixteen is forbidden in a large number of dangerous occupations, and the hours are limited to forty-eight a week in all gainful occupations.

In bringing this chapter to a close I must remind the reader that laws are one thing and their observance another. In comparing the three countries, there can be no dispute that laws are best observed in Germany and least in America, while England stands midway; and this holds good of the factory laws. There is abundant evidence that in the United States they are not exempt from the operation of that corruption in public life and contempt for law which astonishes every observant European visitor. Two or three illustrations will suffice to corroborate this statement.

In the annual report of the factory inspector of Pennsylvania for the year 1902, I find the following passage referring to child labour:—

> There were 407 illiterate children dismissed. These had been furnished with certificates in violation of law. The officer administering the oath had disobeyed the law in examining the children as to their ability to read and write the English language.
>
> A number of aldermen and notaries public have been prosecuted and fined for issuing certificates in violation of the factory law.

The same report shows that the law relating to accidents is an absolute farce. Of all the great steel and iron works in the Pittsburg district, employing in the aggregate scores of thousands of men in the most dangerous work, only one reported any accidents whatever. This total disregard of the law holds good generally throughout the State.

The mitation of hours by law is equally liable to non-

observance. New Jersey is the most advanced State in this respect. There the hours laid down for women and children are even shorter than in Massachusetts, namely, fifty-five hours a week; but, says Mr. Carroll D. Wright, the United States Commissioner of Labour, "this regulation is not observed, or at least only in slight degree, outside the silk industry".

Conclusion.—Factory laws are demanded in the interest of the community for the protection of workers, particularly women and children; but their unequal application may be to the disadvantage of one country in competing with another. The English laws are on the whole more stringent and less carefully adjusted than the German, and in some respects they exercise a prejudicial effect on the development of industries. In the United States the laws vary from nothing at all to a fairly substantial code; but as a whole they are elementary and very imperfectly observed.

CHAPTER VI.

FACTORY CONDITIONS.

(1) Premises.

The physical conditions under which work is carried on undoubtedly exercise an influence on efficiency, not only through their effect on the health and strength of the workers, but also on account of the facilities or hindrances to working involved. A good light, for instance, greatly promotes the execution of delicate processes; order, organisation and convenient arrangements in the workshop facilitate smooth working.

The inspection of a large number of factories, including the most famous establishments in existence, has produced a strong conviction in my mind that on the whole a higher standard in regard to such conditions is maintained in Germany than in England or in America, and that England stands next in this respect. But if the best alone be taken no superiority can be claimed for Germany. There are works and factories in America and in England quite equal in every respect to the German best. Indeed I have seen nothing anywhere so stately, well-built, well-kept and enjoying such surroundings as the great mills in the Bradford district. But the earlier development of manufacturing industries in England and the traditional practice of workmen starting factories for themselves on a small scale with small means has produced a larger number of antiquated, cramped and dilapidated premises. This is notably the case in Sheffield, Staffordshire and on the Tyne. In Sheffield the file-cutting and cutlery industries are still often carried on under conditions so inferior that one wonders how the work is done at all. I have seen, even in a superior factory, men grind-

ing hollow-ground razors—a delicate operation requiring the nicest manipulation—in a light so bad that they must have been guided more by sense of touch than of sight. And on the Tyne I have seen works—famous works too—so dilapidated that portions of the buildings and plant still in use were actually falling to pieces. Cramped, congested and untidy workshops are so common as to be almost characteristic. Some of the greatest engineering and machinery works have every shop in that condition. And they can be matched in America. We have no establishment of equal importance in England quite so ill-lighted, congested and inconvenient as the great locomotive works in Philadelphia. In Germany also, there are old and inferior works, but they are neither so numerous nor so bad. The standard is higher. To make a proper comparison, however, it will be necessary to take the more important points *seriatim*, and pass them briefly in review.

Air.—Speaking generally, this, which is one of the most important points in regard to the health of the workers, is well looked after in all three countries. If certain special processes, in which noxious fumes or dust are given off, be excluded, it may be said with confidence that the atmosphere now maintained in factories is better than that breathed in any other buildings frequented by the work-people. It is better than that in schools, churches, chapels, public-houses, public halls or theatres, and far better than that in the homes of the workers. I make this statement as a matter of observation, but it is corroborated by scientific evidence and among other facts by the tests, so far as they go, of the Departmental Committee appointed by the British Home Office to investigate the ventilation of factories. The air of a large public hall was examined at different points and at different times in the evening, and it yielded from 14·2 to 44·4 volumes of carbonic acid per 10,000, giving a far higher average than the tests for the factories examined. I am confident from my own observations that further investigation would establish a marked superiority for factories in general over most other buildings, not excluding the Government offices occupied by the factory inspectors. The notion that the atmosphere of factories is exceptionally bad and injurious to health is derived from

an earlier state of things and does not hold good to-day, save in special circumstances. There is not very much to choose between the three countries in this respect, but according to my observations fresh air is as a rule somewhat better secured, both in Germany and America, than in England, although the English law alone lays down a standard of over-crowding. The value of a standard of cubic space in securing purity of the air in rooms is one of those sanitary assumptions which have not stood the test of experience; evidence of different kinds has long been accumulating to show that the really important thing is ventilation or the supply of fresh and the removal of foul air. If these are secured the cubic space is of comparatively little importance, if they are not it is useless. And they are more generally secured by mechanical means in Germany and America than in England. Fans cannot be tampered with by the workpeople, who generally prefer a stuffy atmosphere and make a practice of closing windows and blocking up ventilators. This is notably the case in fine-spinning cotton mills. The process requires a high temperature, and in order to attain the maximum output the spinners like a super-heated atmosphere and prefer to exclude the outside air unless the weather is very warm. Windows are also closed in order to keep the material from being blackened by smoke. In Germany fine spinning is not done, and in America it is only carried on at New Bedford; there I found the atmosphere decidedly better than in fine-spinning rooms at Bolton, but that may have been because the external air happened to be warmer at the time and could be more freely admitted.

With regard to injurious fumes and dust, great attention is now paid to minimising these evils both in Germany and in England, and very good results are obtained. But here, again, the same difference is observable. In Germany the conditions are more uniform; in England they vary greatly—some are very good indeed, others unsatisfactory. This distinction has its root in the national character. The Germans—both employers and employed—obey a rule or follow an example more readily; they are more docile and more open to innovations recommended by science or authority. The English, and particularly the

workpeople, are very conservative, naturally disinclined to novelty, contemptuous of it and of authority.

I came across a characteristic illustration of this spirit at the British Westinghouse Works at Manchester. The installation is magnificent, and embodies numerous modern improvements. Among others are a number of smiths' forges with a down-draught arrangement which carries off all the smoke. The atmosphere was perfectly clear in the midst of a score or more of open fires. I stopped at one of the forges and said to the men, "This is a nice arrangement, isn't it?" "Well," said one of them, in a disparaging tone, "we ain't accustomed to these 'ere fires." "What's the matter with them?" "Just about good enough to boil your can on," said his mate scornfully. "Oh," I said, "are they no good for forging?" "No; nor for welding either," they replied with intense disdain. And so on. "We ain't accustomed to these 'ere fires." That is the English workman down to his bones, and rather than change he will put up with smoke, fumes, dust or anything else, no matter how poisonous. German workmen and workmen in America, whether English or not, have little or none of this spirit; and therefore it is easier for conscientious employers to provide and maintain good conditions. They have not the same dead weight of unwillingness to work against. I speak of the rank and file of the workpeople, not of trade union leaders, who commonly lay great stress upon sanitary conditions of work.

Another reason why unsatisfactory premises occur more often in England is the discouragement of rebuilding induced by local bye-laws and high rates. It is not the fault of the bye-laws; they are necessary for the protection of the public, but they should be enforced with discretion, and should not be applied to cases for which they are not intended. I will give an instance. In one of the Midland manufacturing towns there are some particularly admirable electrical works. They are not large, but of a model character. I have not anywhere seen better workshops or better appointments for the health and comfort of the workers. The shops are modern, light, airy, well-warmed, clean and well-kept; there are dining-rooms, cloak-rooms, lavatories and so forth, separate for the men and women,

and all admirably arranged. The business is increasing and the shops are so built as to admit of extension, when required. With this in view a large new workshop was temporarily closed in at one end. Lath and plaster would have been quite sufficient for the purpose, as the structure was only intended to stand for a few months, pending extension of the building. Yet the local authority insisted on enforcing the building bye-laws, and put the company to the serious and useless expense of building an 18-inch brick wall. The London Building Act at present in force contains a clause which practically limits the size of workshops, an unfortunate provision, as the largest shops are almost always the best. It is said to have compelled at least one firm to remove their large works elsewhere. I repeatedly inquired both in Germany and the States if manufacturers were subjected to any such disability, and was informed that it was unknown.

The English system of raising rates on assessment is a direct discouragement to rebuilding, which operates very strongly in just those places where rebuilding is required, and with increasing force in recent years, when municipal expenditure has risen in a reckless fashion. Sheffield is a case in point. It is a very old manufacturing town, full of cramped and antiquated premises; but I found the rates were 8s. 6d. in the £, and owners unwilling to rebuild because of the heavy tax imposed by the re-assessment of new premises.

Warmth.—Some premises require warming in winter, and this is more generally attended to in Germany and America than in England. No doubt the severe cold to which those countries are liable makes artificial warmth more necessary, and people are more used to it in general.

Light.—I am clearly and decidedly of opinion that good lighting is better secured in Germany than in England and better in England than in America. The German factory law alone mentions "sufficient light" as one of the conditions to which attention must be paid, and great care is taken to secure it. I have not seen a single ill-lighted room or workshop. The window space is always ample and lighting from the roof is more general than with us. The practice of having workshops in several stories one above

the other is much less common. The buildings are more spread out. And even textile mills rarely have more than three or four stories, instead of five, six or more. Weaving sheds are always lit from the roof, a very important matter, because with Jacquard or any similar looms side lights are so cut off that there is practically no daylight at all, unless it comes from above, and artificial light must be used. I believe that the care taken in this respect by German manufacturers is due less to the law or any compulsion than to their own recognition of the importance of good light in promoting efficient work. It is curious to what extent this most obvious fact has been ignored in building factory premises in the past in England. No doubt modern methods of construction permit of a larger window space than was formerly the case; but an examination of old premises reveals an indifference which seems to be intentional. All recently built factories, however, that I have seen are admirable and not surpassed by any in other countries. That cannot be said of the United States, where I have seen many modern mills and other works miserably lighted. Weaving sheds placed underneath other rooms are common, and, indeed, the rule. Spinning and weaving are more often combined in the same building than in England; and in that case the spinning rooms are at the top and well lighted, the weaving sheds on the ground floor, underneath other rooms, and so dark that artificial light has to be continuously used. A bad light is the most conspicuous and general defect of American factory premises. With regard to artificial light electricity is now coming into general use in all three countries.

Safety.—The fencing of machinery is carried out much more thoroughly in England than in Germany according to my observation; in America it is almost ignored. I have referred to this point in the last chapter, and have mentioned the complaints of vexatious requirements made by English manufacturers in some districts; but, broadly speaking, they heartily recognise the need and the advantage of fencing. It is an interminable problem, because new machinery is constantly being produced, and the protection required is rarely thought of beforehand: but the tendency is all in the direction of increased safety, and much

machinery is now sent out provided with proper guards. It cannot be doubted that other countries will eventually level up to the English standard in this respect. I am told that German manufacturers ordering English machinery now have it sent provided with guards. In some American factories and notably in the larger cotton mills in the South, danger from machinery is to a certain extent obviated by the exceptionally ample floor space and wide gangways; and both in America and in Germany I have seen many ingenious arrangements for disposing safely of belting and shafting; but the complete covering in of moving and projecting parts, which may be seen in some of the best English factories, does not seem to have been attempted.

Dust.—I am not able to speak with equal confidence about the disposal of dust. To form a judgment it would be necessary to compare a number of special trades, which I have not had the opportunity of doing. But if the arrangements in leading cutlery works at Sheffield and Solingen respectively dealing with dust in dry grinding and polishing be taken as a criterion, I can only say that the German hoods and extracting fans seemed the more efficient of the two, though I note the improvement at Sheffield recorded by the superintending inspector, who after enumerating a number of grinding processes, says: "It would now be difficult to find any one working at one of the above-named processes without a fan and suitable pipes, cowls or bonnets to carry off the dust".[1]

The superiority of the German arrangements noted by me seems to be borne out by the age-mortality figures for grinders in the two districts, as given by Dr. J. Uffelmann:—[2]

PERCENTAGE OF DEATHS OF GRINDERS OVER 20 YEARS OF AGE.

	Under 40.	Over 40.
Solingen district	58·5	41·5
Sheffield district	63·5	36·5

It would not be right to draw any general conclusions from this particular case, but I am bound to say that it is

[1] *Annual Report of the Chief Inspector of Factories for 1902*, p. 79.

[2] Eulenburg: *Real-Encyclopädie der gesammten Heilkunde*, "Arbeiterhygiene".

in accordance with the superior standard of general cleanliness unquestionably maintained in German factories and discussed below. In American factories, on the other hand, the opposite obtains. I have not seen any of the dangerously dusty industries as carried on in the States; but with the exception of emery grinding and polishing in some States they are subject to no special regulation, as I have shown in the last chapter; and in regard to other industries a general slovenliness prevails which is rarely seen in England and never in Germany. This is notably the case in the great cotton mills in the South. They are in many respects very well appointed, but the air is commonly filled with cotton fibre and dust, which lie thick upon the machinery and floor. Insufficient time appears to be devoted to cleaning.

Sanitary provisions.—In this respect English factories are distinctly inferior although they are gradually improving, and many modern premises leave nothing to be desired. The provision of baths, washing-places, cloak-rooms for women and clothes-lockers for men, as well as an adequate number of closets, is general in Germany and common in America. In England it is still exceptional. This is partly due to the larger number of old premises, but much more to the habits of the English workpeople, who do not care for washing facilities and generally make little or no use of them when they are provided. I have repeatedly seen rows of washing-basins which were never used or used for anything but washing; and at the British Westinghouse works I had an opportunity of witnessing a practical illustration of the disdain with which they are regarded. At those great works most extensive lavatories have been provided, containing in all some 2,000 basins. I was talking to the superintendent when the closing bell rang. "Now," said he, "we will go and see how many of the men are using the lavatories to clean up after work." As we walked across the galleries, a few seconds after the bell, the floor below was already black with the hurrying crowds rushing for the door and pulling their coats on as they went. In a moment they were gone. In one of the lavatories we found a solitary workman washing himself with great relish. That was all out of 3,000 or 4,000.

"Ah," he said, as he scrubbed himself dry, "it's a great boon if they only knew it." English workmen love to be dirty all the week; they seem to take a pride in presenting a ruffianly appearance. It is the mark of their calling, the honourable badge of toil, the privilege of the "horny-handed". On Saturday evening, on Sunday and on holidays no one is cleaner, and only those who go to the most expensive tailors are better dressed. These habits deceive the unwary observer, who thinks that American workmen are better dressed. But let him note the two on Sunday and take a good look at the crowds of tidy, well-dressed young men who parade the streets of every English industrial town with equally spruce and well-dressed women folk. The grimy ruffians and the slatterns of the week are gone, metamorphosed into these clean and comely persons. I do not know, but I fancy there is an unwritten social law which makes cleanliness on week-days, or at any rate to and from work, an affectation and an offence. A man who breaks it is regarded as giving himself airs.

Now in Germany and America workmen of the better class keep themselves clean. In the former they are taught cleanliness at school, and during their period of military service they acquire the habit in barracks, where the sergeant takes good care that they "wash behind the ears," and they retain it. Mechanics, artisans and others engaged in dirty work keep a suit for the workshop and put their better ones in a locker on arriving. At Krupp's works at Essen the numbered lockers run up to 29,000 and some hundreds. Washing after work is part of the process of dressing, and the men are glad to make use of facilities which are liberally provided. In all large works that I have seen douche and other baths were provided, as well as hand-washing places, and they are largely used in summer though less often in winter. In America the democratic principles of social equality take the place of military training to some extent in the inculcation of cleanliness with a similar, if less uniform, result; but the provision of washing facilities is much less general than in Germany, and the lower class of European workmen, who are very numerous, still exhibit their native dislike of soap and water.

It is not the fault of the factory inspectors in England

that more washing accommodation is not provided. On the contrary, some of them are apt to be pedantic on the subject and to make a fetish of basins. They visit the workpeople's preference for dirt upon the manufacturer and urge him to more strenuous exertions, as though the multiplication of basins would have the hypnotic effect of an oft-repeated advertisement and simply force people to use them by the power of suggestion. They insist that basins shall be of a certain pattern and placed so many inches apart; they lay down an arbitrary standard of the number of basins in proportion to workpeople. This is vexatious when those already provided are not used. I do not know any West End club which would satisfy the requirements, and I never go into my own, of which the chief inspector of factories is a member, without thinking of the painful report upon the sanitary arrangements which one of his lady inspectors would certainly make if it were a factory. In short, we have the fuss, but do not get the result. I do not see why so much importance is attached to basins. A trough with running water is simpler and better adapted to the purpose, more cheaply and easily provided and less subject to damage; but I am afraid that English factory hands will never take advantage of washing facilities until, in the first place, they are brought up to it, and in the second are not in such a desperate hurry to be off to their amusements.

Other Appointments.—The question of benevolent or paternal institutions will be separately discussed in a subsequent chapter, but I do not include among them factory appointments for the ordinary comfort and convenience of the workers. In some works such appointments are carried to the point of luxury, and then they partake of a paternal nature; but these establishments are of a somewhat exotic character and not representative. It is possible, however, in all works to treat the workers as human beings, and to pay a certain attention to their needs without indulging in the superfluous luxuries of the show place. I regard the distinction as important, because I find everywhere, in spite of isolated instances to the contrary, a growing dislike of paternalism, but on the other hand the opposite extreme of absolute indifference to the comfort of workpeople, outside

the requirements of factory laws, also seems to be giving way to a feeling in favour of a middle course, which aims at the provision of reasonable comforts while avoiding anything in the nature of fancy appointments. Cloak-rooms and lockers, which have already been mentioned, come under this head; so do dining-rooms and canteens. In very large works, employing many thousands of hands, it is of course impossible to provide messrooms for all; nor is it necessary for those workpeople who are housed near their work; but for those who are not it is a real boon and a comparatively simple matter to provide hot water and means for heating the food they bring with them. I have found this generally preferred to a canteen, where the men are apt to grumble at the food served, and to complain that they do not get their money's worth. In works and factories of moderate size messrooms can be provided. This is done in some modern establishments, both in England and in America, but it is more common in Germany; and where messrooms exist they are often furnished with a small library and a piano and are used for social purposes. These are of the nature of superfluities and verge on paternalism, but if the people provide their own that objection is removed. That sort of thing would be less appreciated in English manufacturing towns where the people are abundantly supplied with means of recreation, but messrooms are coming into favour.

Order.—Of all conditions relating to premises this is the one in which German factories most conspicuously excel. They are clean, orderly and well-kept in a remarkable degree. These qualities seem to be universal, and they extend to the dirtiest and most untidy departments. The foundry is the severest test. It is usually a scene of dirt and disorder, unmitigated by any attempt to be tidy, and aggravated by an atmosphere heavy with smoke and gloom. The German foundries were a revelation to me; they are as clean and well-kept and almost as light as any other shop. The remarkable order maintained is systematic and in a large measure intended to promote the prevention of accidents. I am told that a very different state of things used to prevail, and I conclude that the Accident Insurance laws have a good deal to do with the improvement. In

the accident-prevention rules of the Rhine-Westphalian Engineering and Small Iron Industries Association, I find it laid down in the first paragraph that—

> The gangways in all work-rooms must be broad enough to exclude as far as possible injury to persons using them by machinery or transmission parts in motion. They must be kept in good condition and must not be blocked by the heaping of material or the transport of articles.

That is exactly what happens in most of our engineering shops; there is no room, the place is congested, and manufactured or half-manufactured articles lie promiscuously about in all directions, blocking the fair-way. The entire freedom from such disorderliness in German shops and work-rooms undoubtedly conduces to efficiency as well as to safety; and it is secured chiefly through the habits of order inculcated into all alike—workmen, managers and owners—by the military discipline they have all alike undergone. English manufacturers appear to be learning the lesson; the newer shops put up by alert and enterprising firms are admirably arranged, and leave nothing to be desired in the way of order. Perhaps the Workmen's Compensation Act has not been without influence in this direction. In the United States I have already described two establishments—Brown & Sharp's tool works at Providence and the Westinghouse electrical works at Wilmerding—which can hardly be surpassed. There are others equally admirable, but the general level, though perhaps higher than in England, is certainly below the German standard.

(2) Plant.

No charge has been more assiduously brought against English manufacturers than that they have suffered their plant to fall behindhand and are quite outclassed in this respect, especially by American competitors. There is truth in the charge, but it requires some large qualifications. In the first place, the whole range of textile industries, which constitute by far the most important class of our manufactures, must be exempted, and with them a very large branch of the machinery industry.

Take cotton, the greatest of all the textile industries.

I think it can be conclusively shown that though the Lancashire mills fell behind several years ago the manufacturers applied themselves to recover lost ground with so much energy and success that they have ever since led the world in equipment, and have displayed unequalled enterprise in the adoption of improvements. I have some interesting evidence on the subject from America. I have already (see p. 218) described a strike, which I witnessed at Lowell, for an increase of wages. The argument used by the strikers was that higher wages were paid at Fall River, and the answering plea of the employers was that on account of the inferiority of their plant they could not afford to pay the same wages as the Fall River mills. This confession of inferiority was not only accepted by the strikers but was laboured in my hearing by their counsel, who laid the blame for the admittedly inferior equipment on the neglect of the mill owners in allowing their plant to become antiquated. The cotton manufacturers at Lowell, therefore, stand self-condemned on this point. But perhaps the equipment at Fall River is of extraordinary merit. I went over some of the chief mills and did not think so; but not willing to trust my own judgment I asked the secretary of the Operative Cotton Spinners' Trade Union. He had been to England not long before, and had gone over a number of mills at Bolton. His verdict was that Lancashire was more up-to-date and more ready to adopt improvements. "If an improvement to mules, for instance, comes out the Lancashire spinners adopt it at once; here they will go on with the same for thirty or forty years."

This is an absolute reversal of the relative position which has been much too freely assigned to English and American manufacturers. And it is not confined to cotton, but holds good of the wool and worsted trades, of hosiery and carpets. Indeed this superiority of equipment in the best English mills is even more marked in some of these trades than in cotton. The best textile machinery is still English in spite of American enterprise and German application. In the most up-to-date cotton mill in the States (at New Bedford) and one of the very few which spin really fine counts of yarn, I found that all the breaking, carding, combing and spinning machines came from Manchester. So too with

looms. "They cannot make a good loom here," said the instructor in weaving at one of the newest and most perfectly equipped textile schools in the States. "These things are no good," he continued, indicating several of the machines under his charge, "some of them are an absurdity; paint covers a multitude of sins." No doubt they are improving the quality of their textile machinery, both in America and in Germany, and are rapidly becoming more independent; but it is largely by copying English models. The weaving instructor just mentioned made an exception in favour of one firm of American makers, and gave me a curious explanation of their success. A loom made at Keighley in Yorkshire and consigned to an American mill was somehow dropped at the machine works, and since then they had been turning out good looms, which were an exact copy of the strayed English model. Such was his story. The American weakness for turning out hurried and badly-finished work is fatal in dealing with the finer sorts of textiles, which can only be successfully produced by accurately working machines. The Germans, who do not suffer from that weakness, are now more self-sufficing in superior textile machinery than the Americans: but I foundthe installation both in mills and textile schools still largely of English origin. In the newest and most perfectly equipped textile school in Germany, which makes a specialty of cotton, I found machines by nine English makers against a single German firm in the same processes, and in showing me round the director, who was for a moment at a loss for the technical name of some part of a machine, applied to a man standing by. He was an English workman engaged as practical instructor.

These facts might be corroborated by others. For instance, in the finest worsted mill in the United States I found combing machines from Leeds, spinning frames from Keighley, and looms from Bolton: and in a leading hosiery mill in Saxony I found the knitting machines nearly all English. But perhaps enough has been said to make good my point. I do not deny the enterprise and progress of America and Germany, but I contend that in the whole group of textile trades English manufacturers have fully held their own and have displayed rather more than less

ability to keep abreast of the times in regard to mechanical equipment. I am reminded of an answer given me in a great English establishment, which stands at the very head of its own department—Platt Brothers, of Oldham. We were talking of foreign competition, and I said: "You know the Americans are very ingenious". "So are we," was the sturdy reply, and it is justified. The machines turned out from Oldham go all over the world, including the United States, and are of unimpeachable quality. And the equipment of the works is not surpassed by any establishment on a similar scale in the world. But the cotton manufacturers of Lancashire do not confine themselves to home-made improvements and remain oblivious to what is going on elsewhere. The Americans have recently displayed their ingenuity and enterprise by developing two inventions of much importance in the cotton industry. These are ring spinning and the automatic loom. The first is an old appliance originally brought forward in England; the second is the invention of a Yorkshire mechanic, who went to the States a few years ago. But the credit of developing both belongs to America. They are suited to the class of work which is chiefly carried on there. Ring spinning is not applicable to the production of the finest yarns, but it is very convenient and economical for low and medium counts. Similarly the automatic loom is only, as yet, suitable to very plain weaving; but it is extremely economical, for a single weaver can attend to from sixteen to twenty-four looms instead of two. These machines, therefore, do not compete with that section of the trade which is concerned with the finer products, but their value for the commoner classes of goods is fully recognised by Lancashire cotton manufacturers and machinery makers. Ring-spinning frames have been introduced into many mills, and automatic looms are being adopted. Improvements on the American (Northrop) type have already been brought forward.

In the second place, a great change has recently taken place even in those trades to which the charge of backwardness properly applied. There is no doubt that in many of the metal and leather trades, for instance, the application of machinery for increasing the output and cheapening pro-

duction was until quite recently carried very much further in America than in England, and that the equipment of English factories and works had become antiquated. The reasons are quite obvious. English manufacturers had long been in possession of a market which satisfied their needs, and not feeling the stress of competition had not exerted themselves to change the old order. American manufacturers were compelled to exert themselves to make a market, and were spurred on by that driving ambition which distinguishes them. One of the difficulties with which they had to contend was scarcity and consequent dearness of labour; and this stimulated the inventive faculty with which they are so richly endowed. They applied all their ingenuity to the development of labour-saving machinery with immense success. The same stimulus of necessity has driven German manufacturers along the same road. Less inventive than the Americans they have relied more on their remarkable capacity for applying science to industry and for assimilating new ideas, wherever they originate; and they have been untiringly alert in noting and adopting improvements. Meanwhile English manufacturers jogged on in the old track and were left behind. This is not the whole story, and supineness is not the only cause of their eclipse. Industrial development has been hindered in some directions by antiquated regulations, for the government has been even less wideawake than the manufacturers; and the introduction of new methods has been more effectively resisted by the workmen in England than elsewhere. I shall return to this point when dealing with trade unions. The fact that many English trades did fall behind-hand in equipment needs no detailed proof; it has been fully admitted to me in private conversation by manufacturers of the highest authority. But it is, I think, interesting to note the opinion of English workmen or those who represent them, and I will therefore tabulate the reports of those members of the Moseley Commission who represented the manufacturing industries most affected.

But before doing so I should like to express an appreciation and a criticism of those reports. Taken as a whole they do great credit to English labour. Some of them are quite admirable, I might even say masterly. They are

marked by shrewd observation, sound judgment and an excellent faculty of direct and pithy expression. Most of the members praise American education, but their own essays are an uncommon testimonial to the results which may be obtained in benighted England. On some points the information supplied them was defective and hence a good many discrepancies; but upon the question of factory equipment each man speaks with intimate knowledge of his own trade and is a competent witness. At the same time a certain allowance must be made for the unconscious prejudice attaching to their official position as representatives of British workmen, which has led them into some curious inconsistencies. Thus we are told that American workmen are better educated and better paid, American factories better equipped and supplied with better material and yet the product is inferior or no better. Since the product is the object and the test of the conditions of production, it is difficult to see on what ground they can be judged superior if their combined result is inferior. Reluctance to admit that any workman can turn out better work than the Englishman is here evidently struggling with a too ready recognition of the advantages enjoyed by his competitor; and some qualification is necessary to reconcile the opinions expressed. They are as follows:—

QUESTION.

Do you consider American factories better equipped for production than English?

ANSWERS.

Blast-furnacemen—Yes, very much better.

Iron-founders—There is not a great deal of difference, but what little there is is in favour of the Americans.

Iron and Steel Workers—There is no doubt that the leading mills of American manufacture are far ahead of our own best mills in their arrangement and output.

Engineers—In some respects American workshops are better equipped than English. They are equipped with a greater variety of special tools made for special work and repetition work.

Shipbuilders and Boilermakers—The equipment of ship-yards and shops in other ways, that is in machinery, is not better than in Great Britain; in fact, better machinery can easily be found in the old country.

Shipwrights—Speaking generally, and applying the question as to ship-yards, I do not think so.

Sheffield Cutlers—Yes. There is a greater use of machinery, and no expense is spared to secure any new device that will increase the output.
Midland Metal Trades—Yes.
Cotton Spinners—The only advantage is that a much better material is used.
Cotton Weavers—American cotton mills are well equipped.
Boot and Shoe Operatives—Some are and, on the other hand, many are not. The employers in America do not hesitate to invest in new machinery, and if it does not come up to expectations, they put it aside. Any fresh idea is worked for all it is worth.
Leather Workers—Yes.
Paper-makers—Yes.

Out of thirteen answers representing from twenty to thirty trades, seven are more or less decidedly affirmative, two are affirmative with qualifications, two are non-committal and two are distinctly negative. When the necessary allowance has been made for the conditions I think these answers fairly represent the truth. It must be remembered that as visitors the members of Mr. Moseley's party were shown the best in America, whereas their position as trade unionists makes them more familiar with the worst at home. The representatives of cotton spinning and weaving did not visit Lowell, which is equivalent to leaving out Oldham at home, and their investigations appear to have been confined to the best mills at Fall River and New Bedford. In view of the evidence given above, I think it is clear that their answers, cautious as they are, are too favourable to the American industry, and show more desire to see merits than defects. The Fall River trade unionists thought so, and particularly desired me to qualify one statement made by Mr. Wilkinson to the effect that the material supplied for weaving is much better in America. That was only true, they said, of the warps. I think that the opinions quoted in regard to some of the other trades should be discounted in a similar way, but when all allowance has been made the verdict of these representatives of English labour must be accepted as broadly confirming the charge of antiquated equipment in English works in a number of metal trades at least.

It would, however, be a great mistake to generalise or to attach too much importance to this factor. The difference is most marked in the production of raw or half-manufactured iron and steel, and above all in the rolling mills

which, until lately, carried the application of machinery much further than had been attempted with us. But even at Homestead, where this work is carried on at the highest pressure, I noticed some facts which suggested caution in making comparisons to the disadvantage of England. The newest and by far the best shop there is devoted to the manufacture of armour plate, a steel product which requires the most costly machinery and the most expert knowledge. I was told that this part of the Homestead industry is being carried on in conjunction with Krupp's; but having the newest shops at Essen and Sheffield fresh in my mind I was by no means overwhelmed by the installation of the Carnegie Company, and noted with considerable interest that the heavy tools bore the names of two firms at Leeds, of one at Manchester and one at Glasgow, and that the hydraulic press which was being erected under the eye of a Scotch foreman also came from Manchester.

The most instructive point, however, in connection with equipment is this, that English manufacturers have already learnt their lesson and are profiting by it. As I have said, they know that they had fallen behind and admit it. Once alive to the fact, they have set to work to recover lost ground with an energy which is full of promise. In all the works which I have visited in the course of this inquiry I found the heads of the business perfectly cognisant with what is being done in other countries in the way of machinery and appliances. In every case I found that owners or managers or engineers had been to the United States or Germany or both, and that no one could tell them anything they did not know. Floods of advice have been showered upon them, and possibly some of it has been useful, but I am satisfied that they know their own business very well and have neither less capacity nor less energy than any of their competitors. I found new plant being laid down and new appliances being introduced in one metal trade after another, from blast furnaces down to curry combs; and not in these alone, but wherever the pinch of necessity has been felt. This is the great teacher; it has taught other countries to develop their powers to the utmost and to take advantage of every device in order to come up with England, which had so long a start.

Now it is England's turn and the lesson has not failed to produce the same impression upon manufacturers. They have been the first to learn it, because they have been the first to feel the need. Other classes will have to learn it too, and are perhaps beginning to do so—the workpeople, the commercial people, the official people, the political people and, finally, the general public. Meanwhile it is high time to recognise that manufacturers are already setting their house in order. I am at present speaking only of plant; there are other points in which they still seem hardly to realise the situation, but in this they do, and the fact should be stated with as much emphasis as the charge of previous backwardness. It is the more necessary because criticisms of their inefficiency have been very much overdone and have damaged English industries in the eyes of foreign customers, who have heard them denounced and their rivals extolled by Englishmen so loudly that the notion that England is indeed "played out" has taken deep root. I have met with it everywhere.

Now it may be doing the fishmonger a service to call his attention to the fact that his fish are not so fresh as they might be; but to run up and down the market crying "stinking fish" and pointing out the extreme freshness of the goods proffered by a rival firm is not wise, more especially when the fish of the rival firm are not so very fresh after all. This is what a good many English visitors to the United States have done. They have overstated the case, partly through generalising too hastily, partly through ignorance of the conditions at home, partly through being dazzled by the American shop windows. We have heard a great deal, for instance, about the American practice of "scrapping" machinery every few months, and this has been extolled as a great virtue, as though scrapping were an end in itself. For my part I fail to see that it is any proof of sagacity to be continually putting in machinery which has to be thrown out again in a few months to make room for something else. If American manufacturers were generally in the habit of doing so they would be very foolish; but they are not. A false impression has been derived from particular cases. I have already mentioned one in Chapter IV. The Westinghouse Electrical works do

make a practice of selling a quantity of machinery every few months and replacing it by something newer; but theirs is a special case. Mr. George Westinghouse is a born inventor with a still active brain, and he is continually making experiments and improvements. The trial of new machinery is part of the business, and the old is not scrapped but sold. Of course there must be scrapping. In all trades improvements are introduced from time to time and occasionally a revolution is effected. So it has always been since machinery was invented. Of late years such improvements have been more frequent in America and have given manufacturers there an advantage. But there are compensations in being moderately backward, if the power and the will to regain ground are not lost. Those who follow often surpass those who lead if they are willing to study the example and profit by the experience. England has led in many things besides manufacturing industries and has seen herself surpassed by those who followed—notably in matters of public health, in drainage, isolation hospitals and water supply—only to come to the front again by learning in turn from them. The great mistake which English manufacturers made was to ignore too long what other people were doing and to despise their rivalry. That mistake can never recur. Having recognised the situation they are profiting by the experience, and it may be confidently anticipated that in no long time their equipment will be not merely equal but superior to that of any competitor.

A point to which much attention has been drawn in connection with improvements in plant is the question of encouragement given to workmen of an inventive turn. It is true, I believe, that suggestions are more generally welcomed by employers in America, but I have met with no evidence of the existence of systematic encouragement. Repeated inquiries of employers as to whether they offered any reward produced only negative answers. "No," they said, "there was no standing offer, but if a man made a suggestion it was considered, and if it was thought good they took it up and he derived an advantage from it, either directly in money or by promotion." Inquiries among workmen generally elicited the opinion that suggestions were indeed

taken up, but that the workman got very little out of it; employers were ready enough to exploit his brains but kept the lion's share of the profits to themselves. I suppose that the poor inventor has always and everywhere been liable to the same untoward fate. America is no paradise for him, for he is still dependent on the capitalist. But it is generally easier for him to get a hearing there than in England. I should rather say that inventive workmen are less discouraged there than that they are more encouraged. The patent laws are less heart-breaking; but it is not true, as I have often seen alleged, that a man has only to file his idea for a small fee and the office guarantees the validity of the patent. The matter is not quite so simple as that. It is necessary to employ an expert to draw up a proper specification, and though the office undertakes a preliminary examination the granting of a patent does not ensure its validity or guarantee it from attack. The inventor has still to take that risk, and as a matter of fact the proportion of patents which turn out invalid in the United States is higher than in England, usually over 50 per cent. against 40 per cent.

On the other hand, there is more direct encouragement in England than is generally supposed. I have found a standing reward offered for suggestions in several factories, and in others I have met with men who had risen to good positions through making suggestions, and were well satisfied with the encouragement they had received. I have met with such men both in textile mills and in iron and steel works, and I have no doubt that if the history of foremen and shop managers in general were examined it would be found that a large proportion of them had risen from the ranks by this road. The head man in charge of the hydraulic press in one of our largest works told me that he had come on as a fitter, but he used to think about his work when he went home at night, had ideas and made suggestions, and so rose to his present position, which carries with it five times the pay of a fitter. He said that intelligent men were encouraged at those works, and rather laid the blame on the younger men for failing to make use of their opportunities. I have frequently met with this opinion among older men who have risen to superior posi-

tions by their own exertions. The young men, they say, now think too much about football and other amusements and take no interest in their work; their minds are occupied with other things. One firm of manufacturers, engaged in a special metal trade, which affords great scope for ingenuity and has been revolutionised in America, had for two years offered a standing reward of £50 for any suggestion by workmen without eliciting a single attempt to earn it. The blame for lack of inventiveness, therefore, must not be laid wholly upon the employers.

Where discouragement exists, I have found it generally traceable to foremen, who are willing to take credit to themselves for any suggestion, but snub the common workman who is unfortunate enough to have ideas. Of course, the remedy for that is greater accessibility of the heads of a concern; and it cannot be doubted that the direct and frank intercourse between man and man, whatever their positions, which is such a striking feature of American life, is a valuable factor in promoting enterprise. But the main difference is an indefinable something in the air, arising out of the general conditions. In the United States every ambitious and adventurous tendency is fostered as in a forcing house by the restless, striving spirit that pervades the atmosphere, and has its origin in the boundless possibilities seeming to lie before every man in a democratic country, sufficiently developed but not yet filled up, and possessing a vast protected home market. In the earlier period of industrial expansion in England, the application of mechanical power to manufactures opened up similar possibilities, and had a similar effect in stimulating invention; but the cutting down of profits by factory restrictions and by free imports has largely removed the stimulus, while the restraint on individual enterprise exercised by trade organisations, and by the general influence of a groove established, has damped the ardour of invention, though it has not destroyed the inventive faculty. This is proved by the inventiveness developed by British workmen who have emigrated to America. In the more stimulating and congenial atmosphere their faculties, which have lain sterile at home, are brought to fruition. The Northrop loom, which is perhaps the most important mechanical appliance

contributed to manufacturing processes by the United States since the cotton gin and the elevator, is a signal example. "Since 1860 the number of patents issued to citizens of foreign countries has increased in a much greater ratio than the number of patents to American citizens." [1]

In Germany the question hardly arises so far as workmen are concerned. I made inquiries everywhere about it and always received the same reply, that no suggestions were ever made by workmen. Mechanical inventiveness and initiative are not among the natural gifts of the German nation. In the early days of machinery when power was first being applied to the textile industries, German manufacturers were put to a great disadvantage by their inability to produce the new appliances and they had to depend on surreptitious borrowing from the French or English. They have not been without their successes, as the names of Krupp, Hartmann, Siemens and Loewe sufficiently testify; but their industrial triumphs have come more by way of the laboratory than of the workshop. They have, however, made up for this comparative deficiency of natural endowment in truly characteristic manner by study, care and knowledge. The equipment of their works and factories cannot be surpassed at its best, and the general standard reached is at the present time probably higher in Germany than in England or America. In the application of electrical power the German workshops are certainly as far advanced as any; they are fitted with the most modern tools both large and small; and though still dependent on England for some kinds of textile machinery, Germany is decidedly more self-sufficing in that respect than the United States. Manufacturers obtain their machinery from every source without prejudice wherever they can get the best for their purpose—from England, Switzerland and the United States, as well as from their own makers—but they are becoming more and more self-sufficing. They are, in fact, at the present time supplying English workshops with the very appliances in the production of which England excels, such as heavy machine tools and hydraulic presses; and English manu-

[1] *Twelfth Census of United States*, vol. x., p. 758.

facturers who have installed German tools agree in pronouncing the quality first-rate.

With regard to the use made of machinery and the pace at which it is run, I notice that Mr. Moseley's trade unionists express different opinions on the relative rates of speed in England and America. Their observations confirm my own impressions; the conditions vary in different trades. In some the speed is certainly greater; in others, cotton spinning for instance, it is not; and in cotton weaving Mr. Wilkinson says the output per loom is less in American mills. On the other hand, in worsted mills I have seen combing and other machines running themselves to pieces and spoiling the material. It is on this side that Americans incline to err. Excessive speed is apt to sacrifice quality to quantity, and is therefore only advantageous when the latter is the main object, as in the production of half-manufactured steel. Finished work will not be hurried, and the attempt to hurry it is largely responsible for the most prominent defect in the manufacturing products of the United States, namely the prevalence of rough, badly finished or flimsy work. When the output of American rolling mills is extolled as an example to European manufacturers they may reply by pointing to American locomotives which break down after a few months, to machine tools which have to be strengthened to do their work, and to looms which will hardly work at all. Speed is not an end in itself and may be overdone or misapplied, like many other things. The object, from the point of view of industrial efficiency, is neither quantity nor quality in itself but a combination of the two in varying proportions according to the class of products. This problem seems to me to be better solved in English factories than in those of the United States or of Germany. The former are apt to make too much of speed, the latter too little. It is not in the German temperament to hurry, and they never sacrifice quality to speed; but they sometimes do the reverse when it is unnecessary. I have it on the authority of a leading English trade unionist, who thoroughly understands first-class engineering work and has been through the principal workshops in Germany, that German mechanics are unnecessarily thorough in giving a minute finish to their

work. Morally a merit, but industrially a defect. Between the two extremes comes the English temperament, more careful of quality than the American, more capable of speed than the German. In industries which have their equipment up-to-date the combination of speed and quality attained by English manufacturers easily surpasses either of their competitors. Of this cotton is a notable example.

It is not part of my purpose to discuss the economic or social aspects of the development of machinery. However interesting they may be they are outside the scope of my inquiry. I may say, however, that the broad outcome is to cheapen production, and to make life physically easier both to consumer and producer. The former has innumerable things brought within his reach; the latter is spared much toil and yet generally earns higher wages. The last point opens up a question of much importance, with which I shall have to deal—namely the resistance offered to machinery by workmen; but it will be more convenient to discuss it in connection with trade unions. The effect of machinery on the worker is a subject on which much has been written. It has been deplored from two points of view—that of the philanthropist or sanitarian and that of the socialist. The former deplores its physical, the latter its social effects. Both views seem to me inconsistent with the facts. With regard to the first the development of machinery has been accompanied by great and continued improvements in the conditions under which work is carried on; and it enables the workman to earn more money in shorter time and with a less expenditure of bodily exertion. With regard to the second it tends to that equality and suppression of the individual which is the ultimate aim of socialism. In short it is a mighty agent in promoting what both call "progress". So far as it makes greater demands on the workman they are in the direction of increased mental quickness and power of attention. There are exceptions; attendance on some slow-moving automatic machinery is a mere saunter and amongst the very easiest ways of earning a living that have ever been devised. But economic pressure tends to correct this by multiplying the number of machines attended to by one man; and generally speaking mechanical processes of manufacture, from the

electric crane to the self-actor mule, require progressively more and more concentrated attention. And as machinery is extended and perfected less and less manual skill is demanded. This is deplored on other grounds; but it is plausibly argued that the énergy released by the disappearance of manual processes is applied to other and "higher" forms of mental activity. In short, however we look at it, machinery appears to make for "progress". Where "progress" is making for is another question, on which I will express no opinion. It is open to men like Ruskin, who did not believe in "progress," to object to machinery, but denunciation by those who do is illogical.

All these questions have, however, a merely academic interest. Whether we like it or not, "whirr! whirr! all by wheels! whiz! whiz! all by steam" is the burden of our civilisation, and we shall go on marching to that tune whithersoever it leads. The nation which aspires to a place in the industrial race must whirr and whiz with the best.

CHAPTER VII.

HOURS.

In every country the hours of work vary so much in different localities and trades that no summary statement about them can be made with precision. The attempt to do so by striking an average without an explanation or further details seems to me merely misleading. This is particularly true of the United States, where the variations are very wide. Both in England and Germany the hours are more uniform, largely owing to the factory laws, which prescribe a limit where women and children are employed. Such a limit appears to set a standard for other trades in the same locality although no women or children may be employed in them. But even in England and Germany, if all industries be taken, the variations are sufficiently wide to make an average untrustworthy. It is necessary to utter a warning on the subject, because the natural craving for a precise and summary statement has produced such averages. They have appeared clothed in all the authority of official reports, and have been accepted as final without any examination of the basis on which they rest. Thus it is said and repeated that the "hours of labour" in the United States are much less than in Germany. If all occupations, including State and municipal employment, handicrafts and building trades, be counted in, I have no doubt that the statement is valid, because the average is brought down by an eight hours' day. But to apply it to competing manufactures, whether in general or in particular, is a totally different matter; and I think that in this restricted application it can only be maintained with a good deal of qualification. The distinction must be borne in mind. It will explain some discrepancies between my results and others

that have been published; for I am only concerned with manufacturing industries. The non-competing trades and public employment have not the same international significance, and must be left out of account.

One general statement may be made with confidence. It is that hours of work are shorter in England than in Germany or in America. This is true both in general and in particular. I cannot find any industry in which the English hours are not shorter, though individual establishments may be found in the United States working no longer than those of the same trade in England. How much shorter they are is a question which can be better determined after we have examined the facts in detail.

England.

Comprehensive and trustworthy statistics with regard to hours of work are not easy to get; but perhaps sufficient information can be derived from various sources.

In the textile industries the hours are practically limited to 55 a week (with an additional half-hour for cleaning) by the provisions of the Factory Act for regulating the employment of women and children. (See Chapter V.) In some establishments this limit is not reached, but, to be on the safe side, we will say 55 hours a week in this large group of manufactures.

Probably the next group in importance is formed by the engineering trades. For these full details are given in the Annual Statistics of Rates and Wages, prepared by the Amalgamated Society of Engineers. The following fifteen trades are included in the group: smiths, fitters, turners, millwrights, planers, borers and slotters, millers, coppersmiths, brass finishers, machine joiners, pattern makers, die sinkers or press tool makers, electrical engineers, roll turners, drop-hammer forgers. The hours vary in different localities from 48 to 56½, but the latter only occur in three or four small places. In the great centres of engineering they are uniformly 53 or 54 and 48; the latter occurs in Government establishments, in a few private ones and generally when day and night shifts are worked continuously. Taking the most important districts, we have the following number of hours for the ordinary week:

Manchester, 53; Leeds, 53; Newcastle and Gateshead, 53; Birmingham, 53; Oldham, 53; Bolton, 53; London, 54; Sheffield, 54; Glasgow, 54. In his report as a member of the Moseley Commission, Mr. Barnes, the secretary of the Amalgamated Society, gives 52 as the average for the engineering trades.

In a number of associated trades, such as the boiler-makers, iron founders and shipbuilders the hours are the same; and this holds good of the smaller metal trades—tubes, nuts and bolts, locks and keys, chains, edge tools, files, cutlery and other things. In all these the weekly hours are 53 and 54. So also in the boot and shoe trade.

In short, the normal week in England may be set down at 53, 54 or 55 hours. It very seldom exceeds this limit and then only by an hour or two, except when continuous work is divided into two shifts. But that is exceptional; the 8 hour shift giving 48 hours for six days and 56 for seven days is now almost universal. If, therefore, an average is to be struck it would be quite safe to say that it does not exceed 54 hours a week or 9 hours a day; and I do not think it possible to get any nearer than that. Of course the week is not divided into six days of 9 hours each, because Saturday is a half-holiday. This institution and the prevalence of the 8 hour shift form the chief differences between England and the other countries in regard to time conditions. In textile factories the day's work, except on Saturday, is usually done from 6 A.M. to 6 P.M., or 12 hours minus 2 hours for meals as required by the law; or else it ends before 6 P.M. with 1½ hours for meals. Thus the first five days in the week account for 10 hours each or 50 in all. The remaining 5 are worked on Saturday, namely from 6 to 12, with one hour for meals as required by law. In other factories where the working hours are only 54, 53 or less in the week, the curtailment is effected by leaving off somewhat earlier on ordinary week days. The usual time allowed for meals is an hour for dinner and half an hour for breakfast. Sometimes also an afternoon interval for tea is allowed. It is found that the workpeople like to begin early and leave off early particularly on Saturday, so as to get the whole afternoon free. The latest change in the law was

devised largely with the idea of giving them an extra half hour in bed on Saturday; but they do not appear to care for that. At one of the largest mills in the country a poll was taken and 97 per cent. voted for 6 in preference to 6.30 A.M.

Before leaving the subject of hours in England it is necessary to mention a question which gives rise to a great deal of friction. The workpeople constantly complain that the nominal hours are not kept and that many employers are in the habit of "cribbing" time at the intervals or at the end of the day by running machinery for a few minutes later than the stated hour, or starting a few minutes earlier. It is impossible to say how far this complaint is justified, but I have met with it so often, particularly in textile districts, that I cannot suppose it to be unfounded. Its existence is evidence of the inveterate distrust of employers entertained by the employed, which is such a fruitful source of trouble between them in England.

Germany.

I gather from many public utterances that an erroneous impression prevails concerning the hours of work in Germany. They are decidedly longer than in England, as I shall show; but the difference is not so great as it is commonly represented to be. I do not know whence this erroneous impression has arisen, but it may perhaps be due to the factory laws which permit women to be employed for 11 hours a day on ordinary week days and for 10 hours on Saturday. If these hours were generally kept the impression would be justified, but actual investigation shows that they are not. As the point is one of importance, I shall state the facts with some particularity, and will give the exact hours worked in a number of factories representing different trades in different towns (1903).

1. Silk mill at Crefeld—

Summer.

Begin	7 A.M.
Breakfast	8.30 to 8.45 A.M.
Dinner	12 to 1.30 P.M.
Tea	4 to 4.15 P.M.
Close	7 P.M.

Total, 12 hours, *minus* 2 hours for meals = 10.

WINTER.

Begin	7.30 A.M.
Dinner	12 to 1.30 P.M.
Tea	4 to 4.15 P.M.
Close	7.15 P.M.

Total, 11¾ hours, *minus* 1¾ hours for meals = 10. On Saturdays the closing time is 5.30 P.M. The week is therefore 58½ hours in summer and 58¼ hours in winter.

2. Engineering works at Düsseldorf—

Begin	6.30 A.M.
Breakfast	8.15 to 8.30 A.M.
Dinner	12 to 1.30 P.M.
Tea	4.15 to 4.30 P.M.
Close	6.30 P.M.

Total, 12 hours, *minus* 2 hours for meals = 10. Week, 60 hours.

3. Machinery works at Düsseldorf—

Begin	7 A.M.
Dinner	12 to 1.30 P.M.
Close	6.30 P.M.

Total, 11½ hours, *minus* 1½ hours for meals = 10 hours. Week, 60 hours.

4. Hosiery mill at Chemnitz—

Begin	6 A.M. (winter 7 A.M.).
Breakfast	8.30 to 8.50 A.M.
Dinner	12 to 1 P.M.
Tea	4 to 4.20 P.M.
Close	6 P.M. (winter 7 P.M.).

Total, 12 hours, *minus* 1 hour 40 minutes for meals = 10 hours 20 minutes. On Saturdays close at 5.30 P.M. Week, 61½ hours in summer 60½ hours in winter.

5. Cotton mill at M. Gladbach—

Begin	7 A.M.
Dinner	12 to 1.30 P.M.
Tea	4 to 4.15 P.M.
Close	6.30 P.M.

Total, 11½ hours, *minus* 1¾ hours for meals = 9¾ hours. On Saturdays close at 5.30 P.M. Week, 57½ hours.

6. Woollen mill at Elberfeld—

Begin	6 A.M.
Breakfast	8 to 8.15 A.M.
Dinner	12 to 1 P.M.
Tea	4 to 4.15 P.M.
Close	6.30 P.M.

Total, 12 hours 30 minutes, *minus* 1 hour 30 minutes for meals = 11 hours. On Saturdays close at 2 P.M. Week, 62 hours.[1]

[1] In May, 1903, the hours at this mill were voluntarily reduced by the employers to 60. It is interesting to note that the men demurred to the change, being on piece work, and said they could quite well do 62 hours. But on its being pointed out to them that the 10 hours' day was being demanded by social reformers they acquiesced.

7. Cutlery works at Solingen—

Begin	7 A.M.
Breakfast	9 to 9.15 A.M. (youthful workers 9 to 9.30).
Dinner	12 to 1.30 P.M.
Tea	4 to 4.15 P.M. (youthful workers 4 to 4.30).
Close	7 P.M.

Total, 12 hours, *minus* 2 hours for meals = 10 hours. Week, 60 hours for men, 58½ for women.

8. Engineering works at Chemnitz—

Begin	6 A.M. (winter 7 A.M.).
Breakfast	8 to 8.30 A.M.
Dinner	12 to 1 P.M.
Tea	4 to 4.15 P.M.
Close	6 P.M. (winter 7 P.M.).

Total, 12 hours, *minus* 1¼ hours for meals = 10¾ hours. Week, 61½ hours.

9. Steel works at Essen (Krupp)—

Begin	6 A.M.
Breakfast	8 to 8.15 A.M.
Dinner	12 to 1.30 P.M.
Tea	4 to 4.15 P.M.
Close	6 P.M.

Total, 12 hours, *minus* 2 hours for meals = 10 hours. Week, 60 hours.

Here are five metal and four textile factories, representing the principal groups of industries and situated in seven representative industrial towns. In the metal trades the hours are with one exception uniformly 60 a week; in the textiles they vary from 57½ to 60, so that the average is somewhat less than 60. These examples, however, though typical and authoritative (the details being taken from the factory rules which have the force of law), are too few to warrant a general statement. I will therefore supplement them with some more comprehensive information kindly collected for me by Dr. W. Zimmermann, of Berlin.

The Hirsch-Duncker trade unions (see Chapter XIV.) publish some comprehensive statistics on the subject of hours every three years. They are arranged in such a manner as to make it difficult to use them, but Dr. Zimmermann has worked out certain results. The largest union is that of the machinery and metal workers, and they furnish reports from 460 places, covering nearly all the industrial districts in Germany. The summary result is as follows:—

Normal Hours a Day.	Number of Places.	Percentage of whole Number.
Under 10	31	7·0
10	269	58·5
10-11	66	14·0
11	62	13·5
Over 11	32	7·0

In about two-thirds of the places reporting, the hours are 10 or less. An analysis of the localities reveals considerable differences. Thus the proportion of places reporting 10 hours a day or less in each district is as follows, the total number reporting in each being placed in brackets: Berlin district (11) 90 per cent.; Wurtemberg (13) 90 per cent.; Hanover, Oldenburg, Hanse towns and Schleswig-Holstein (19) 89 per cent.; Kingdom of Saxony (23) 84 per cent.; Baden, Rhein-Pfalz, etc. (25) 80 per cent.; Province of Saxony (Prussia), Anhalt, Brunswick, Thuringia and Hesse (47) 76 per cent.; Bavaria (12) 75 per cent.; Brandenburg (46) 65 per cent.; Rhineland-Westphalia (155) 58 per cent.; Posen, Pomerania and Mecklenburg (43) 56 per cent.; Silesia (67) 50 per cent. Of course the industrial importance of these districts varies greatly, as the varying number of places in each suggests. The average is brought down by the large number of places in Silesia, Rhineland and Westphalia reporting 11 and 12 hours a day. This is in a considerable measure due to the 12 hour shifts regularly worked in blast furnaces and foundries, which are numerous in these districts. The difference between the two-shift and three-shift day in continuous working is a very important item in determining the mean hours in certain trades, and it is one of those factors which tend to mislead. For instance, if the normal day for most workers in certain industries is 10 hours in two countries, A and B, but in one the two-shift and in the other the three-shift day prevails in those departments where work is continuous, you would get the statement—hours in A (having the three-shift day) 8 to 10; hours in B (two-shift day) 10 to 12. Then if an average is struck it will be A 9 hours, B 11 hours, and the conclusion is reached

that in those industries the working day is about two hours longer in B than in A, when as a matter of fact, for the great majority of the workmen and the processes it is exactly the same in both. I think therefore that the factor of shifts should be separated if possible from the question of hours in non-continuous work ; but of course it must be taken into account in making international comparisons. It increases the general advantage enjoyed by English workmen in regard to hours, since the 8 hour shift, as I have said, is almost universal in England, whereas in Germany and America the 12 hour shift is either universal or general.

The trade union reports just quoted go to show that the hours worked in the representative establishments I have given above are exceeded elsewhere ; but they support the general conclusion that in the large majority of establishments 10 hours is the normal day, and that in most of those which exceed 10 hours the day is somewhere between 10 and 11 hours. Even in that part of Germany where the longest hours prevail, namely Silesia, the 10 hour day obtains in half the cases reported. This is very different from statements current in England which represent the general working hours in Germany as 11 and 12 a day. So far as I can ascertain 11 hours are only exceeded in the two-shift industries: and in them it is customary to give two hours off for meals, so that the real working hours are 10.

Some further notes are furnished by Dr. Zimmermann from various sources.

The annual report of the Berlin Trades Council for 1902 says that of 71,776 workmen, chiefly trade unionists, 21,356 worked 60 hours a week and all the rest less. That was in a time of depression, and it includes all trades.

The Düsseldorf Trades Council prepared in the same year the following figures :—

District of Düsseldorf.

Industry.	Number of Workmen.	Hours Worked.
Machinery and metal trades	940	11
	259	$10\frac{3}{4}$
	570	$10\frac{1}{4}$ to $10\frac{1}{3}$
	441	10
Textiles	700	$11\frac{1}{6}$
	475	11
	770	$10\frac{1}{4}$
	990	$10\frac{1}{2}$
	1950	10
	28	$9\frac{1}{2}$

Rest of Rhineland-Westphalia.

Industry.	Number of Workmen.	Hours Worked.
Machinery and metal trades	430	11
	180	$10\frac{3}{4}$
	580	$10\frac{1}{4}$
	2300	10
Textiles	2337	11
	140	$10\frac{3}{4}$
	250	$10\frac{1}{2}$
	1180	10

I confess I do not understand the meaning of these figures. The numbers given bear no sort of relation to the numbers actually employed. There were nearly twice as many men employed in Krupp's works, which are within the area, at 10 hours a day than in the whole of this list; and to my certain knowledge there are more men employed in machinery works in Düsseldorf alone at 10 hours than are given for the whole district. Then what is the meaning of 570 men working from $10\frac{1}{4}$ to $10\frac{1}{3}$ hours? The only explanation I can think of is that the list refers to the

grievances of members of the unions and includes overtime, which is very common in Germany.

The chief Factory Inspector for Saxony reported in 1902: Dresden, in many factories the so-called English day (7 A.M. to 5 P.M. with half an hour for dinner) obtains; Meissen (pottery works), generally 10 to 11 hours; Freiberg, in a number of establishments at the request of the workers the day has been shortened by abolition or curtailment of tea time: Zittau, in weaving sheds the 10 hour day is general; Leipzig, in the printing trades the normal day is 8 to 9 hours, in textiles the 11 hour day is still almost universal.

Another official report for Saxony states that in the Bautzen district the working day for adult males in most businesses is 11 hours; longer hours only occur in individual cases during the summer months in brick-fields and quarries; with a few unimportant exceptions the 10 hour day is universal in the engineering trades.

From these various *data*, derived from trade union and official sources and from personal inquiry, I think a broad generalisation can be made with some confidence. It is that in those large competing branches of manufacture with which I am concerned the normal working week in Germany is most commonly 60 hours, but when it departs from that standard it is more often over than under the 60 hours. It is true that all these figures relate to a time of depression, and in busier periods much overtime is worked; but on the other hand the movement for reduction of hours is going on all the time. As a proof I may compare the previous Hirsch-Duncker report with the one given above, thus:—

PERCENTAGE OF PLACES REPORTING.

	1900.	1903.
Under 10 hours	3½	7
10 hours	52	58½
10 to 11 hours	16	14
11 hours	21	13½
11 to 12 hours	7	7
12 to 14 hours	½	...

If a summary comparison must be made I should say that the normal working day in the chief manufacturing

industries is from 1 to 1½ hours longer in Germany than in England, and that the difference constantly tends to diminish. In the large concerns on which the brunt of competition falls the difference is only 1 hour or half an hour a day. In those industries, however, in which continuous working obtains, such as blast furnaces, glass, pap r and chemical works, the difference is increased by the prevalence of the 8 hour shift in England.

Some other points may be noted. The deliberateness characteristic of German life is shown by the length and frequency of meal intervals. The time allowed for dinner is never less than an hour and sometimes an hour and a half, and from a quarter to half an hour is allowed for afternoon coffee as well as for breakfast. I have met with no complaints of cribbing time ; it would be entirely contrary to the national spirit, for if the Germans have a conspicuous virtue it is the observance of rules established. The hours of work, it must be remembered, form part of the factory rules, which are legally binding on employers and employed.

The hours of beginning and closing are also significant. Only two out of the nine factories start at 6 A.M. all the year round ; 7 o'clock is more common, and in winter the hour is even extended to 7.30. Factory labour hardly begins earlier than business, in marked contrast to the practice in England. This concession is made good by the later hour of closing, and this holds good of business also. The characteristic deliberateness is accompanied by an equally characteristic steadiness and tenacity of effort. The hours leave much less opportunity for other occupations in the evening, which may or may not be a good thing ; it depends on the way the time is spent. Further reference will be made to this point ; but I may observe here that the hours of work leave German workmen with less both of inclination and opportunity to spend money on amusements. Only in one factory on the list (No. 6) is Saturday afternoon secured as a holiday, and that by lengthening the other days to 12½ hours. Everywhere, however, the women leave off at 5.30 P.M. on Saturday. This is secured by law with the object of enabling them to prepare for Sunday.

United States.

It is not possible to present the facts so simply in the case of the United States. There, even in factories, the hours vary from 48 to 84 a week. Both extremes are exceptional; but within these outside limits very large variations exist even in the same trades, and the discrepancies are too great and too numerous to be reconciled by some half-way average. It is necessary to differentiate between the States and to group them. In the Census Report, which gives a good deal of information about hours of work, six groups are distinguished: (1) New England, (2) Middle, (3) Southern, (4) Central, (5) Western, (6) Pacific. The two last are unimportant and may be left out of account. The others stand in the following order according to the number of wage-earners employed in manufactures: (1) Middle, (2) Central, (3) New England, (4) Southern, having, in round numbers, 2,000,000, 1,500,000, 1,000,000 and 700,000 wage-earners respectively.

Taking textile factories we have particulars of thirty-four establishments (cotton, woollen, silk, hosiery, dyeing) thus distributed, with the hours worked :—

Locality.	No. of Establishments.	Hours a Week.
Middle States	14	60 (all)
New England	13	58 (6) 60 (7)
Southern States	6	60 (3) 66 (3)
Central States	1	48

Tabulating the thirty-four establishments according to hours worked we get the following:—

No of Mills.	Hours Worked.
24	60
6	58
3	66
1	48

It is certainly difficult to strike an average from these figures, even if we accept the proportions as fairly representative of the whole country. No doubt the 60 hour

week prevails in the great majority of American textile mills, but I doubt if the relative prevalence of the variations from that standard is correctly represented. For instance, the 48 hour mill is altogether exceptional and a very small concern employing about 100 hands. I believe also that considerably more than half the southern mills work 66 hours and not 60. I have visited a number of the largest of them and found them uniformly working 66 hours. I have heard of some working 72 hours. If, however, the foregoing figures be taken as they stand and treated arithmetically, the number of hours above and below 60 exactly balance each other, and 60 emerges as the normal week. This is a little less than in Germany, but in my opinion it is too low as a statement of the facts in regard to international competition. The severest competition offered by America in the textile group comes from the cotton industry in the Southern States, where the average working week is at least 63 hours and probably more.

Passing on to the metal group I have tabulated details of fifty-eight establishments in the four areas taken above. They represent a large number of industries, including foundries, rolling mills, the manufacture of engines and machinery of various kinds, locomotives, boilers, tyres, tools, etc.; and they are thus distributed: Middle States, 25; Central States, 18; Southern States, 8; New England, 7. The hours come out as follows:—

No. of Establishments.	Hours Worked.
42	60
7	59
1	58
1	57
1	56
3	55
2	54
1	50

Here, again, the normal week is 60 hours, though a perceptible proportion of works curtail that time by one hour, and a slightly larger proportion further reduce it by varying amounts down to 50 hours. But the establishments working the short times are all small and probably of a special character. The 55 hour week obtains in establishments

which close early on Saturday after the English example. Some of the works included in the 60 hour group return also other times, both above and below 60, as worked in different occupations carried on in the same factory. Such minor variations occur in other countries. For instance, in machinery works men may be kept on in the foundry, or those engaged in subsidiary occupations may be dismissed earlier; but the normal time holds good for the general body of workpeople. When shifts are worked the weekly hours are generally 72, 78 and 84; that is to say, the shifts are of 12 hours for 6, 6½ or 7 days in the week. This is enormously in excess of the English prevailing practice. It is not easy to say how it compares with the German practice in the same industries. In Germany, as I have already said, 12 hour shifts are the rule, and in a number of industries (blast furnaces and other iron and steel works, chemicals, glass, cement, sugar refineries and others) exceptions are allowed to the statutory prohibition of Sunday employment. But in all cases provision is made for regular times off; in most cases 24 hours are allowed every other Sunday or 36 hours every third Sunday, and the principal holidays are observed. In the United States, on the other hand, a practice largely prevails of working night and day shifts in alternate weeks and in some establishments the night crew only works five days in the week, so that the average week is 66 hours instead of 72. At Homestead the day shifts are 10 and the night 14 hours. With all these complications and modifications it is not possible to make a summary arithmetical comparison; and these are not all. Meals must be taken into account. The nominal 12 hour shift makes no allowance for meals; it is from 12 to 12. But, of course, meals must be eaten and if time off is allowed for the purpose it should be deducted from the nominal hours, as it is in reckoning the day's work in non-continuous occupations. Now much greater respect is paid to meals in Germany than in America. In the latter I have found in establishments working at high pressure and in 12 hour shifts that in some departments the men were allowed half an hour for dinner and in others nothing at all; they snatched their food as best they could. In Germany I have found in similar works two hours allowed for

meals. Taking all these considerations into account I do not think that according to the practice prevailing in 1900 the hours of work in the great group of industries in question could be said on the whole to be appreciably less in America than in Germany, if indeed they are not more.

The same conclusion holds good of other important competing manufactures and may be accepted as generally valid. In glass and paper-making, for instance, the hours in the United States were 60 and 72; in the manufacture of boots and shoes they were 60 and 59.

Since 1900, however, considerable changes have taken place in the direction of reducing hours. The same movement is going on as in Germany, but apparently with greater rapidity. It has taken effect notably in engineering works, in which the week has been reduced to 54 hours for several classes of workmen in several States. I am not in possession of any *data* which would enable one to measure comprehensively the extent of this movement, but the Massachusetts Bureau of Statistics of Labour has recently published a report relating to the year 1903 which contains the fullest and most authoritative statement of hours worked, among other things, that has appeared in any country. It relates only to Massachusetts, and as that State is in advance of most others in regard to hours, it must be taken to represent conditions above the average. The inquiry embraced 44,606 workers, of whom 59·39 per cent. were on time and 40·61 per cent. on piece-work. I extract the following summary details:—

Boots and Shoes.—Excluding watchmen, firemen and engineers, the average hours worked per week range from 54 to 59 in the different processes, of which about 160 are enumerated. (These lists incidentally afford most interesting evidence of the astonishing length to which the subdivision of labour has been carried by the application of machinery. Massachusetts, it may be remembered, is the greatest centre in the world for the manufacture of boots and shoes, and in no industry has American inventive genius been so active.) In nearly half the processes enumerated the hours are 58 or over, and only in seven are they as low as 54; so that the average cannot be placed much below 58, which is probably the standard.

Cotton.—The average hours enumerated range from 48·50 (band boys) to 66 (starchers). No average can be struck here, and it is difficult to state the hours even in the principal processes. Six varieties of "spinners" are enumerated with hours ranging from 54·44 to 58; card-room hands vary from 55·42 to 58·14; weavers average 56·87; slubbers, 56·58; winders, 57·36; lappers, 58·09; loom fixers, 56·67; second hands, 59·60; third hands, 58·11; piecers, 58·00; finishers, 58·33. From these examples it may perhaps be concluded that the normal week is intended to be 58 hours, but for some hands it is a little above, for others below that standard.

Leather.—The hours are much more uniform and most departments conform to a standard of 59.

Machines and Machinery.—Here again the variations are wide and range from 54 to 60 hours. Some seventy-five classes of workmen are enumerated, of whom the great majority work from 54 to 57 hours a week and a large number do not exceed the minimum of 54 hours. Taking some of the principal classes we have the following: Armature winders, 54; blacksmiths, 55; boiler-makers, 54·52; brass-finishers, 54; brass-moulders, 57; coppersmiths, 55·67; core-makers, 54·80; draughtsmen, 55; drillers, 55·69; drop-forgers, 54; filers, 54; foremen, 55·53; gear-cutters, 56; grinders, 54; lathe-tenders, 55·26; machinists, 55·14; moulders, 56·05; pattern-makers, 55·83; planers, 55·12; punchers, 54·46; riveters, 54·70; sheet-iron workers, 54. It is clear that the hours are considerably less in these trades and approximate to the English standard.

Metals and Metallic Goods.—In this group the hours are longer. Thus we have: blacksmiths, 57·14; core-makers, 57·52; razor hands (etchers, finishers, grinders and handle-makers), 56; iron-moulders, 59·53; pattern-makers, 55·67; screw-cutters, 55; solderers, 58; wire-workers, 58. The week ranges from 55 to 58 hours, and it is far more often 58 than 55. Perhaps 57 would be a fair average.

Paper.—The standard is 58

Woollen Goods.—The standard appears to be 58, but the actual hours more often exceed than fall short of it.

Worsted Goods.—The same holds good of this industry.

The report, which is more concerned with earnings than

with hours, does not explain the variations and discrepancies, but I conjecture that they are due in some measure to overtime and short time. The details were taken from the books of the manufacturers. An attempt to obtain corresponding information from trade unions only elicited partial details relating chiefly to the building and hand trades.

If I may venture to summarise the results of the inquiry I should say that in Massachusetts the standard week in the chief manufacturing industries is as follows: leather trades, 59 hours; textiles, paper, boots and shoes and several metal trades, 58; other metal and machinery trades, 56, 55, and 54 hours. There is clearly a tendency to approximate towards the English standard, but even in this advanced State the minimum is still about the English mean.

Some results of a wider investigation by the United States Bureau of Labour are published in the Nineteenth Annual Report for 1904. I extract some details of the average weekly hours worked in 1903.

Agricultural Implement Makers.—Fitters and grinders, 54; the rest, 58·25 to 59·56.

Carpets.—58 to 59·32.

Cotton.—Mule spinners, 58·85, all the rest over 60: dyers, 62·24.

Dyeing and Finishing.—58 to 59·61.

Foundry and Machine Shop.—53·91 (riveters) to 59·77 (cone-makers).

Hosiery.—56·75 (finishers) to 60 (ribbers).

Iron and Steel.—Blast furnacemen, 84; Bessemer furnacemen, 56·73 to 67·10; bar-iron, 61·30 to 65·39; blooming mill, 48 (3 men in one establishment) to 72; muck-bar, 59·06 to 61·38 (puddlers, 59·63; rollers, 61·38); open-hearth furnacemen, 72 to 74; rail, 56 (leverman) to 72 (catchers, chargers and roughers).

Leather.—Between 59 and 60.

Wool and Worsted.—58 (combers) to 60 (carders and spinners).

The question of overtime greatly complicates the international comparison of hours. The material for estimating its relative prevalence does not exist; but the impression I have gathered from various indications is that it is much more common in America and in Germany than in England.

A special inquiry made in Massachusetts in 1904, shows that a great deal of night work is carried on in textile mills.

By this time the reader who has followed me so far will probably agree with me that it is a very difficult thing to arrive at a summary conclusion, which can be expressed in figures, regarding the hours of work in the three countries. I have made the attempt so to compare England and Germany, and have said that in the latter the daily hours average from ½ to 1½ in excess of those in England. The chief difference between Germany and America is that the range of variation is greater in the latter, and while at one extremity the excess over the English standard is quite as high in America or higher, at the other end it disappears and the English standard is reached, which is not the case in Germany. I conclude, therefore, that the mean level of hours is somewhat higher in Germany, but not much.

Neither the U.S. Census nor the reports of Mr. Moseley's trade union party,[1] with one exception, nor any other inquiry with which I am acquainted gives any exact information about the time of beginning and closing, or about the meal intervals in American factories. I have therefore to fall back upon my own notes.

As in Germany, I find the time of beginning apt to be later than in England; 6.30 and 7 o'clock are common. This, of course, involves leaving off later. The matter is of more importance than appears on the surface. I have mentioned one effect of the later start and longer hours when dealing with Germany; it affords factory hands less opportunity for amusement in the evenings. It also makes attendance at evening schools much less easy, and this constitutes the most salient difference between the trade (technical) education carried on in English industrial towns and that in Germany and the United States. In England the classes are chiefly held in the evening, and are formed mainly or entirely by mill and factory hands. In Germany and the United States, the classes are chiefly day classes, and are attended by any one except workmen. This important fact is generally ignored. Writers on edu-

[1] Reports of the Moseley Industrial Commission.

cation point to the larger number of students in the day classes in Germany and the United States; but they forget the opposite side of the picture and say nothing about the absence or extreme smallness of evening classes, which alone can be attended by workmen. I shall refer to this point again, when speaking of education, but it is in place here in connection with the hours of work.

The only interval regularly allowed for meals is at midday for dinner, and it varies from half an hour to an hour. I have most frequently met with 45 and 50 minutes. This, again, is significant. In England the dinner interval is always an hour; in Germany it is never less and often more; in America it is generally less. In England a pause is also allowed for breakfast; in Germany another is added for afternoon coffee; in America neither is observed. These small matters of everyday routine reflect the different spirit and method of working in each country; they are well worth noting, and perhaps more instructive than volumes of statistics.

There is, as I have already pointed out, a distinct tendency in the United States to shorten the hours of labour. The movement is clearly visible in the comparative statistics for 1890 and 1900 given in the Census Report (Special Report: Employees and Wages). The movement is not universal, for in some establishments the hours were longer in 1900 than in 1890; but in the great majority of those in which a change is noted it is in the direction of shortening. The half-holiday on Saturday afternoon, which is statutory in a few States, is becoming more common, and the workpeople do not show any inclination to make up for it by adding to the length of the day during the rest of the week. In one large cotton mill which I visited the closing hour was 3.30 on Saturday instead of 6.30 as on other days. The management had tried the experiment of closing at 12.30 and making up for it on other days; but the hands preferred the 3.30 arrangement. The tendency towards shortening is probably strengthened by the statutory recognition of an 8 hours' day in public employment and some other occupations in many States. An abstract of the laws on the subject is thus summarised in the Massachusetts *Labour Bulletin* (January, 1904):—

. . . There are twenty-seven States and territories, besides the United States, having an eight-hour day. There are six States where eight hours is prescribed as the limit for a day's work, unless specified to the contrary; these are Connecticut, Illinois, Indiana, Missouri, New York and Pennsylvania. Nevada and the United States specify the eight-hour day upon irrigation works and New York for labourers upon the reservoir. In Wisconsin the eight-hour day is prescribed in manufacturing and mechanical establishments, unless otherwise agreed upon. The laws of Missouri, New Mexico and Tennessee specify eight hours to be a day's work for labourers on road work. Eight hours is a legal day's work in mines and smelters in the following States: Arizona, Colorado, Missouri, Montana, Nevada, Utah and Wyoming. The following States prescribe eight hours as the maximum day's labour upon public works: California, Colorado, district of Columbia, Hawaii, Idaho, Kansas, Maryland (Baltimore), Minnesota, Montana, Nevada, Ohio, Pennsylvania, Porto Rico, Utah, Washington, West Virginia and Wyoming. The United States provides for an eight-hour day upon Government work.

The legality of the 8 hours' day has been repeatedly challenged as unconstitutional and has been tested in the courts of several States and in the Supreme Court of the United States with varying result. Thus—to mention some of the most important decisions—the constitutionality of the law has been upheld in Kansas, Utah and Wisconsin, whereas the law has been held void in Colorado, New York and Ohio.

In several manufacturing towns which have adopted the 8 hours' day for municipal work, I found that factory hands were in the habit of seeking municipal employment in the slack season of the manufacturing year; and in some they were paid 8s. a day. The possibility of obtaining this rate of wages for 8 hours of unskilled labour can hardly fail to strengthen the demand for shorter factory hours without any diminution of earnings.

With regard to holidays, they vary considerably, according to local customs, in each country; but, on the whole, the most holidays are taken in England and the fewest in America. The statutory holidays in England are Christmas Day, Good Friday and every Bank holiday —namely, Easter Monday, Whit Monday, the first Monday in August and the day after Christmas Day. In Germany they are virtually the same, with the addition of New Year's Day and Ascension Day; the only difference is that, instead of the August bank-holiday, *Buss-und-Bettag* is observed in middle of November. This gives six days in England and eight in Germany, but they are supplemented by others in

both countries. In England a week or ten days' holiday is often given at Christmas or at some other time, notably in August in the Lancashire cotton trade. In the Oldham district the workpeople subscribe so much a week to a club and draw the whole money out for what is called the "wakes week" in August. The mills close on a Saturday and do not re-open till the following Monday week. The hands all go to the sea-side. The holidays in Lancashire are eleven in the year. In Yorkshire the sea-side week does not obtain, but there are numerous local fairs which are regarded as holiday occasions. The variations of local customs are such that it is difficult to make any general statement about the total number of holidays ; but, roughly speaking, the statutory days only represent half or less than half the actual holidays.

In Germany there are similar additions, varying in different localities. Each State lays down its own, and in particular districts old customs are observed in addition.

The prevailing religious confession is a factor of importance. Where the Roman Catholic element preponderates, some seven festivals of the church, distributed throughout the year, are observed in addition to those enumerated above. The holidays also carry with them a reduction of hours on the previous day in establishments in which women are employed, as the day must end for them at 5·30 P.M.

In the United States no day appears to be appointed as a universally legal holiday; but practically Christmas Day and Independence Day (4th July) are so observed. The other holidays most generally kept are New Year's Day, Washington's Birthday (22nd February), Decoration Day (30th May), and Thanksgiving Day (a variable feast). Then general election days are usually holidays, and "Labour Day," which occurs on different dates in September, is now statutory in most States. There is a considerable variety of other local celebrations, such as Lee's birthday in some of the Southern States, Lincoln's birthday in some of the Northern ones, Lexington Day in Massachusetts, San Jacinto Day in Texas, Pioneers' Day in Utah and so on. The marked feature of the list is the disregard of religious festivals, except Christmas, and the substitution of events

in the history of the States. Inquiry in industrial centres led me to the conclusion that the actual holidays kept by factory hands are rarely more than six in the year, and often less. Prolonged holidays consisting of several days together, and utilised for visiting the sea-side or the country appear to be unknown, except in the case of factories which close for a week or a fortnight annually for cleaning and stock-taking.

It remains to consider the bearing of the number of hours worked and the leisure enjoyed upon industrial efficiency.

One of the disadvantages which English manufacturers are often said to labour under is the longer hours worked by their competitors. I have shown that the hours are longer; but we cannot assume that this is a disadvantage. It depends upon circumstances. Probably no one will seriously deny that hours of work may be too long or too short.[1] They may be too long because human nature has limits, as the saying goes; rest and recreation are physiological needs; the brain cells, which are the motive power of all action, become exhausted and faculties fail after a time, with the result that bad work is produced. They may be too short, because the power present is not fully utilised, with the result that insufficient work is produced; in the end it would be bad work too, for powers disused atrophy and the less people do the less they can do. These are obvious truisms. The difficulty is to determine what is "too much" and "too little". It depends on circumstances, on the interaction of many factors, on the nature of the work, the demands made upon the worker, and his capacity to respond. Eight hours or less of some work may be quite exhausting, 12 hours of some other work may be easy; similarly, one set of men may get through as much in 8 hours as another set in 12. The arithmetical problems of one's youth depended largely, I remember, on some such assumption with regard to the relative capacity of A, B, and C. They were individuals, but similar national differences are commonly recognised and have been embodied in

[1] Except those who hold that work is a positive evil and the less there is of it the better.

vulgar rhymes. One "jolly Englishman" is said, in his own country, to be worth a varying number of foreigners; and Americans have a still more exalted belief in their capacity to beat all other people in anything and everything. These humorous self-appraisements have a certain basis of fact which must be taken into account. The question is evidently complicated; but perhaps some general principle can be laid down. I beg to offer these suggestions: (1) prolongation of work becomes disadvantageous from the point at which the quality begins to fall off or the speed begins to slacken; (2) shortening of work becomes disadvantageous from the point at which full powers are left unutilised. Experience can alone determine when these points are reached. They will evidently vary in different branches of industry, in different countries and at different periods, as the pace of working changes with improved machinery.

Turning to the lessons of experience we have strong evidence of the advantage of shortening in the gradual substitution in England of 8 hour for 12 hour shifts, and in the tendency, noted above, towards reduction both in Germany and in the United States. This is, to a great extent, a voluntary movement on the part of manufacturers, and if they did not find it advantageous they would not follow it. Even in those cases in which employers have been forced more or less against their will to shorten hours, as, for instance, in the case of railway servants, it has been found advantageous, and no one proposes to return to the old practice of keeping signalmen or engine drivers on duty for 20 hours or more. On the other hand we have examples of the economic advantage of longer hours in the success of the cotton mills in the Southern States, working 66 hours a week, against those in New England working 58. On this point I quote the following significant passage from Mr. Ashton, who represented the Lancashire cotton spinners in Mr. Moseley's party:—

> I was told there was no chance whatever for any further reduction of working hours in the States of Massachusetts and Rhode Island till the other States came down to their level in working hours, and of this there is no prospect whatever.

So, too, at the Trade Union Congress in the autumn

of 1905 acquiescence in a resolution in favour of the 8-hour day was expressly refused on behalf of the Lancashire cotton workers on the ground that they could not afford to shorten hours until they were reduced in other countries.

The experience of the Bradford worsted manufacturers is in the same direction. They have found that the reduction of one hour a week enforced by the Act of 1901 has involved a distinct loss to them, equivalent to one week in the year or $\frac{1}{52}$nd part of the annual output.

These items of experience show how difficult it is to estimate the advantages and disadvantages of longer or shorter hours. That difficulty is increased when one country is compared with another. It cannot be assumed that because the 8 hour shift has been found advantageous in England it would be found equally advantageous in Germany. A question here arises which has a very important bearing on industrial efficiency, and this will be the best place to deal with it. I refer to the relative energy put into their work by the workers. This will obviously affect the number of hours which can be worked with advantage.

Among the suggested causes of American success none has been more prominently alleged than that the factory hands work harder and turn out more. The question was one of those which Mr. Moseley's trade union party was asked to answer. Tabulating the reports of the representatives of the manufacturing industries I get the following :—

QUESTION.

Does the American workman do more or less in an hour on an average than the English workman ?[1]

ANSWERS.

Blast-furnacemen—No.
Iron-founders—10 per cent. more.
Associated Iron and Steel Workers—No.
Engineers—Yes, in quantity, but quality inferior.
Shipbuilders and Boilermakers—No.
Shipwrights—No.
Cutlers—No.
Midland Metal Trades—

[1] The question ought to run, "Does the workman in America do more than the workman in England ?" The form given to it above betrays ignorance of elementary conditions in United States factories.

Cotton Spinners—No.
Weavers—No.
Boots and Shoes—Yes.
Leather Workers—Yes.

On the whole, it will be observed, the trade unionists do not admit that men work harder in America than in England; but there are some exceptions, and perhaps the admissions are as much as one has any right to expect in the circumstances. It is difficult for the representatives of English workmen, who are perpetually told that they are the finest and most industrious workers in the world and have nothing to fear from foreign competitors, to admit publicly that men work harder elsewhere; and great credit is due to those members of the party who have recognised the fact and had the courage to say so. For I am afraid there is no doubt at all that men do work harder in America. I agree with Mr. Moseley's trade unionists so far that the famous "hustling" is more talk than performance. I had the opportunity of closely observing it in operation on one occasion, and was considerably enlightened by an attentive study of the proceedings. It was in connection with some emergency street work and just the sort of occasion to give scope for hustling. The tram line was being relaid in Philadelphia at the point where the two principal streets cross and the work was being done against time at night. A force of about 150 Italian navvies was put on the job and the foreman was a man of colour. It was curious to see white men bossed by a black. He addressed them individually and collectively as "Charlie". The overseer was also on the spot, directing operations, and both talked a great deal. The foreman repeatedly assured the overseer that he was going to "get a big hump on" directly, and both incessantly exhorted "Charlie" to "get a move on there". Charlie was willing enough for his part, but the arrangements were faulty. The men had to fetch materials from a little distance and were perpetually in each other's way going and coming. They got through the job but in a muddled and far from expeditious manner. The "big hump" never realised itself; it was mere talk. I have often seen Italian navvies engaged on a similar task in London working much more expeditiously without any

hustling; and workmen in America confided to me that the alleged expedition existed more in appearance than reality.

Nevertheless, all this being granted, I still maintain that workmen do work harder, and very much harder, in America; not in every case, but taken all round. It is not a conclusion derived from a limited observation only, but rests on the unanimous evidence of the most unimpeachable witnesses, corroborated by observation. American factories and workshops swarm with English workmen, foremen and managers. I have talked with many of them in different trades and different localities, and they all said the same thing. The only qualification I met with came from the English manager of a fine-spinning cotton mill in New England, who said that he could not get so much work out of the men in the hot weather as at home; they drooped on account of the heat. Otherwise they all owned to working harder. The experience of American employers with men fresh from England and with men in England is all to the same effect; the fact is a commonplace. The suggestion that English employers have everything to learn from America and English workmen nothing, that the latter are models of strenuous industry and the former languid drones is absurd. I do think that the employers have, or had, more to learn, but the men have their lesson too, and the prospects of English industry will be poor indeed if they do not learn it. The prevailing, though not universal, spirit at home is that of getting as much and doing as little as possible. The superintendent of some large American works in the North of England gave me his experience of native workmen. "They are not what I expected," he said; "I find them very ready to ask for an increase of wages, but not to prove that they are worth it. When they come and ask me I say, 'Show me you are worth it and you shall have it,' but that is just what they don't do." In this frame of mind they go to America and start working; but after a few months they fall under the spell of the prevailing spirit, and lay themselves out to earn all the money they can; they extend themselves and put their backs into it, to use a rowing phrase, as they never did before. The Yorkshire manager of a carpet mill in Philadelphia, which was full of English workmen, illustrated

the difference in these words: "There is no loitering to be as late as possible after the dinner hour, as in the old country; when the horn sounds every man will push out his handle, he is ready in his place beforehand". I have frequently seen them gathering at the door ten minutes before the dinner hour was over. The workmen cannot explain, though they admit the difference I asked a man from Kidderminster in the same mill, as he stood at his roaring loom. I said: "You not only have longer hours here but you work much harder while you are at it". "Yes, that is so," he answered. "If you were asked to do half as much at home you would go out on strike." He laughed and admitted it. "How is it, then?" He scratched his head and could not tell.

I know how it is, but this is not the place to enter into that. I am here merely insisting on the fact that men do work harder in America, and the digression has already led me too far from the thread of my argument. I do not say this way of working or its causes are entirely admirable and to be imitated; but they exist and they have a bearing on the question of hours. My belief is that with such a rate of work the longer hours, though advantageous in some respects, are disadvantageous in others. As I have said in a previous chapter, the great defect in American work, if some special products are put aside, is want of finish and inferior quality. When, or if, that is overcome, American competition will be much more formidable than it is now. And that defect is mainly due to the pervading hurry. All that employers and employed care for alike is the output; they work fast and they work long to get the quantity. Mr. G. N. Barnes points out the distinction between quantity and quality in his report as a member of the Moseley party, and I believe his is the true answer to the question of working harder. Now, to work long as well as fast is hardly compatible with good finish; and it is the fact that shorter hours prevail in some notable establishments which turn out first-class work. It seems reasonable to connect the two. If, therefore, English manufacturers are handicapped in some branches of industry by the longer hours in America, I submit that the contrary holds good of other branches.

The same argument is not equally applicable to Germany. The more leisurely method of working which prevails there makes long hours compatible with finish and quality, and does not overtask the workers. Thus quality may be combined with quantity, though at the sacrifice of leisure for other occupations. I have little doubt, however, that German manufacturers would find shorter hours economically advantageous; they are, in fact, finding them so. It is not solely a question of quality or finish. Work may lag in general if continued too long, as in the twelve-hour shift. The eight-hour shift has unquestionably proved economically advantageous in England.

To sum up, so far as the hours can be treated as a separate factor without reference to wages, I should say that on the whole the shorter hours worked in England make for efficiency and are of advantage provided that the time is fully and faithfully utilised by strenuous application. If it is not then they are a handicap on English industry, which stands to be beaten on quantity by the more prolonged labour of both competitors. How to secure that strenuous application is the problem for this country; how to shorten hours without loss is the problem for Germany; and how to improve quality without sacrificing output is the problem for America. England, I venture to think, has here the simplest task of the three, though it may turn out the most difficult.

The general tendency to shorten hours will doubtless continue. Apart from the efforts of organised labour and sympathetic reformers to effect reduction as a thing desirable in itself, it will be inevitably brought about by economic pressure, if the principles I have stated are correct. For mechanical invention constantly increases speed of working, which in turn involves more constant and concentrated attention, making greater demands on the brain; and as the demands increase the time during which they can be fully satisfied without exhaustion diminishes. In other words, extent varies inversely with intensity. A reduction of hours becomes a condition of efficient work and is therefore inevitable in many branches of industry. But in those in which there is no change of intensity, such as ordinary unskilled labour, reduced time may mean diminished efficiency.

CHAPTER VIII.

WAGES.

If it is difficult to make precise comparisons with regard to hours it is infinitely more difficult to make them with regard to wages. This subject is so complicated as to fill the student with despair. There is, first of all, immense difficulty in getting accurate information at all. Are you to rely on the payers or the paid? Their accounts rarely agree and often differ enormously. The former have the highest payments most in mind, the latter have the lowest receipts. "My men earn up to such and such a figure," says the employer. "Some of the men are only getting so and so," says the employed. Hence many disputes. Undoubtedly the employer knows best; he keeps the pay rolls. These are the best sources of information if they are accessible, which is not often the case. The details given by the United States Census' Office[1]—by far the fullest statistical statement yet compiled upon the subject—were obtained from the pay rolls and are of the greatest value. But they only represent earnings, not rates of payment; and there is a vast difference between the two. Earnings are the important matter from the social, rates of payment from the economic point of view; the one reflects the well-being of the workmen, the other the wages cost of production to the manufacturer. Both are surrounded with difficulties. Earnings are subject to fluctuations from many accidental conditions, which are lost from view in the average. For instance, if the pay rolls of two similar establishments engaged in the same trade be examined, it may be found that the men employed in A

[1] *Twelfth Census*, "Special Reports: Employers and Wages," 1903.

receive an average of several shillings more in the week than the men in B; but the real explanation may be, not that they are better paid in A, but that in B several old hands are kept on, more from kindness than for business; and their almost nominal earnings bring down the average. Then there is over-time and short-time. On the piece-work system of payments a series of factors ought to be taken into account in comparing earnings, such as hours worked, class of work on order, efficiency of plant, quality of material supplied and other indeterminate conditions. Rates of payment look more precise than earnings, but may be equally misleading. For instance, one manufacturer may pay a considerably higher rate than another and yet produce at a lower wages' cost, because the output is larger in the same time. Again, it looks a simple matter to compare rates in those trades, such as spinning or weaving, which have a fixed price list; but the method of computation is generally so complicated and varies so widely as to make comparison impossible. In short, the money factor cannot be separated from other conditions and taken by itself. No doubt it could if other things were equal; but they never are equal.

Another source of difficulty is that men doing the same work in the same country are paid very different wages in different parts. In the United States men are paid in some States more than twice as much as in others for the same work; in Germany I have found 36s. a week being paid in Rhine-land and 21s. in Saxony for the same work; and in England the actual trade-union rate for fitters ranges from 23s. to 41s. a week; and, of course, where different trades are taken, the variations and complications are much greater. It seems to me, therefore, most unsatisfactory and misleading to lump them all together and produce a fictitious person called the "average" workman. The objection to this method of comparison is heightened by the false air of precision assumed by the result. It satisfies the craving for a simple summary statement, as I have said in the last chapter; but it may be very far from representing the truth. The best way of stating the facts for purposes of international comparison would be to take a number of the leading competing industries and give the range of weekly

wages paid in the representative centres for each trade. Sufficient *data* are not available for doing this in a fairly complete way; but there are some, and we must do the best with them. But I will first endeavour to satisfy the desire for a summary statement, not by creating an imaginary average workman, but by taking the wage paid to the unskilled day labourer, who occupies the same position in every country. This has been suggested to me by both employers and employed as the best measure of summary comparison. Accordingly, I made inquiries in every industrial centre visited, with the following result:—

Daily Wage of Unskilled Day Labourer, Winter of 1902-03.

England.	Germany.	U.S.A.
3s. to 4s.	2s. 6d. to 3s.	3s. to 7s.

It is to be noted, in the first place, that at the time these figures were obtained England and Germany were suffering from severe depression, causing an excess of supply ovet demand in labour, whereas the United States labour marker was in the flood-tide of prosperity. If the German figures are thought too high, I would observe that they have official authority. The current rate of wages paid to the ordinary day labourer in each locality has to be officially declared as the basis of assessment for the State Sick Insurance; and the Ministry of the Interior periodically publishes a return giving any changes that may occur. It is true that a much lower rate than that I have given—down to 1s. 2d. a day—is current in some localities; but that holds good of the other countries also. I am only dealing with manufacturing centres, and the localities included for comparison are as nearly as possible similar and comparable. Indeed, I should say that 3s. is less exceptional in urban industrial Germany than 4s. in England and 7s. in the United States. I only met with one instance of each, namely, at Newcastle-on-Tyne and at Pittsburg respectively. The wage most frequently paid in the class of towns with which I am dealing was 3s. 6d. in England and 5s. in America; and I think these may be fairly taken as averages. If the corresponding German average be taken as 2s. 9d.—and it should not be less—we get the following ratios:—

England.	Germany.	U.S.A.
100	78·6	142·8

These figures are curiously near the only ones I have which give a complete and accurate comparison of the wage rate for a particular industry in all three countries. They were furnished to me by Sir John Brunner and they represent the ratio of wages in the alkali manufacturing industry. They are as follows:—

England.	Germany.	U.S.A.
100	78	135

For Germany, it will be observed, the figure is almost identical with mine. This confirms me in my belief that mine is not far from the mark, for the alkali works are not situated in that industrial district where the highest wages are paid. The ratio for the United States is somewhat lower than mine, but the difference is not very great and can be accounted for in several ways. At any rate the two are near enough to corroborate each other in a striking degree, when it is remembered that comparisons of this kind must be read broadly with a liberal margin. I doubt if it is possible to get a summary statement much nearer to the truth, and I am satisfied that the ratios given above represent the actual state of things far more accurately than those given in the Blue-book issued by the British Board of Trade in 1903.[1] The latter were compiled from a number of quotations derived from different sources between 1898 and 1902, and have reference to fifteen skilled trades. They are as follows:—

	United Kingdom.	Germany.	U.S.A.
Capital cities . . .	100	57	179
Other cities and towns .	100	63	193

The figures for the United States are too high and those for Germany too low. The fifteen skilled trades include the building and furnishing trades which have no bearing on international competition, and they exclude all the textile industries. But taking the manufacturing metal trades

[1] Cd. 1761. Memoranda, Statistical Tables and Charts, prepared in the Board of Trade with reference to various matters bearing on British and Foreign Trade and Industrial Conditions, 1903.

that are given I find the following "average of rates of wages current" in provincial towns in Germany: Turners, 20s.; fitters, 20s.; smiths, 21s. 7d.; pattern makers, 21s.; brass moulders, 19s. 11d. I cannot accept these figures as an average, for I have not found men receiving so little in any manufacturing town, and in the principal engineering centres workmen belonging to the trades cited were generally in receipt of from 27s. to 36s. a week. If the Board of Trade figures for Germany were given as the minimum they would be nearer the mark. Those for the United States appear to be similarly too high. I compare them with the statement of Mr. G. N. Barnes, secretary of the Amalgamated Society of Engineers. He is a good authority because his society has branches in America, and his report, as a member of Mr. Moseley's party, is conspicuous for acute observation and unbiased judgment. "The base rate of wages in America," he says, "as compared with Great Britain is, I should say, about 35 to 45 per cent. higher for operative engineers." This, it may be observed, is in entire agreement with my own and Sir John Brunner's ratios given above. Mr. Barnes adds, however, that the maximum wage paid in America probably runs up to 70 per cent. higher than in Great Britain. Now the average excess of American over English rates given in the Blue-book for the engineering trades is as follows:—

	Capital.	All other Towns.
Turners	86 p.c.	51 p.c.
Fitters	64 p.c.	51 p.c.
Smiths	64 p.c.	108 p.c.
Pattern-makers	79 p.c.	86 p.c.
Brass-moulders	108 p.c.	84 p.c.

The discrepancies between these figures and Mr. Barnes's estimate are too great to be explained away; and the capricious and unintelligible variations shown in the table—compare, for instance, the position of the fitters and smiths—suggest that they are based on inadequate *data* and untrustworthy.

A more recent comparison is contained in the volume prepared by the Bureau of Labour in Washington for the exhibition at St. Louis in 1904.[1] Details of wages are given

[1] *Bulletin of the Bureau of Labour*, No. 54, September, 1904.

for thirteen occupations in different countries from 1890 to 1903, and a summary comparison is made for the year 1903. Several of the occupations belong to the building trades; but four are valid for my purpose, thus:—

	England.	Germany.	U.S.A.
Blacksmiths	100	71	169
Boilermakers	100	65	165
Machinists	100	78	161
General labourers	100	78	164

These figures come very much nearer my own and Sir John Brunner's standard than those of the English Blue-book cited above. The relative positions assigned to England and Germany in two of the occupations is identical, and in the other two it does not differ widely. The discrepancy is greater in regard to the United States, but still much less than in the estimate previously quoted.

The figures hitherto cited have to do with wages based on time rates. I had some hopes in beginning this inquiry of being able to get schedules of rates in different classes of piece-work, which would enable one to make an exact comparison; but I have been wofully disappointed. Price lists are made up so differently in different countries and are conditioned by so many subsidiary factors that no such comparison is possible. A comparative estimate of earnings, however, can be formed in certain occupations. The most accurate figures I have are for cotton weavers.

Cotton Weavers.—The average earnings of weavers (male and female) in Bolton and Blackburn are 23s. a week; at München Gladbach they are 21·6s.; at Lowell 28s. There are cotton towns in the United States where the wages are higher than at Lowell, but also ones where they are lower. The United States Census[1] gives the following "medium earnings":—

Cotton Weavers U.S.A.

	Medium Weekly Earnings.	
	Males.	Females.
North-Eastern States	36s.	30s.
Middle States	32s.	24s.
Southern States	18s.	14s.
All sections	30s.	26s.

[1] "Special Reports: Employees and Wages," 1903.

This gives a rough mean of 28s. for all weavers, which happens to be exactly the same as the figure I obtained from an excellent authority in Lowell. Reduced to percentages they stand as follows :—

England.	Germany.	United States.
100	93	121

The figure for Germany is probably too high for an average, as there are other centres where wages are lower, and none, I believe, in which they are higher. But when allowance has been made for this, it will be seen that in this standard industry the difference between the three countries is not very great. The mean hours in which these wages were earned were 55 in England, from 58 to 60 in Germany, and from 60 to 61 in America.

Woollen Weavers.—In England the weaving is chiefly done by women, and therefore I will take them. The figures I have are these : average weekly earnings in England, 18s., in Germany, 14s., in U.S.A., 32s. This gives the following percentages :—

England.	Germany.	U.S.A.
100	77	177

The hours worked in this case were 54 in England and Germany (namely, short time), and from 58 to 59 in America. If male weavers are taken the result is different, for it is a curious fact that in America female weavers earn nearly as much as male (the median weekly earnings, according to the census, are 32s. for women and 34s. for men), whereas both in England and Germany the men earn considerably more. The proportional figures for male weavers are

England.	Germany.	U.S.A.
100	80	135

This result corresponds very closely with the estimates with which we started. I might give some more figures to much the same effect, but I do not think it would serve any good purpose. I deprecate any pretence to exactness on the point. The more the subject of wages is studied the more intricate it appears to be, and the greater the difficulty of making exact statements. If details were

available for other countries as full and authoritative as those for the United States, a fairly precise comparison might be possible ; but without them it is better not to pretend to a fictitious precision, and to rest content with some rough generalisation. The one I suggest for a sort of working comparison to bear in mind as approximately true but subject to many qualifications and exceptions, is that in Germany wages in manufacturing industries are about $\frac{4}{5}$ths, in America about $\frac{7}{5}$ths, of the English standard. In other words, they are in America nearly twice as high as in Germany, and nearly half as high again as in England.

So far as workmen are concerned, such a comparison possesses no significance apart from the purchasing power of money and the cost of living, which is discussed later on. So far as employers are concerned, differences in the price of labour must be read in relation to a number of other factors, some of which cannot be measured or counted. The economics of wages are, indeed, even more intricate and indeterminate than the facts. A very instructive comparison, kindly furnished by Sir John Brunner, will show the extreme difficulty of formulating a conclusion. The relative rate of wages paid in the alkali industry, as I have already stated, is : England, 100, Germany, 78, U.S.A., 135 ; but that does not represent the labour cost of a given quantity of output, because the number of men required to produce it also varies. The comparative number of men employed for equal output is 110 in America and 131 in Germany for 100 in England. Thus we get the following result :—

	Men.	Wages.	Cost Per Ton.
England	100	100	100
Germany	131	78	102
U.S.A.	110	135	148

This is most interesting. I asked Sir John Brunner if the difference in the number of men required is due to superior capacity or to some other condition, and he replied : " The difference in the output per man is very largely but not entirely due to a difference in capability. To a small extent it is due to labour-saving machinery." Here we have an English manufacturer enjoying an advantage of nearly 50 per cent. in wages cost of output over his

American competitor, due in part to lower wages, in part to the superior capacity of the men and in part to superior machinery. His advantage over his German competitor, though much greater in regard to the men, is reduced almost to vanishing point by the lower wages paid by the latter. One of the most interesting features of the comparison is that the English works have the eight-hour and the others the twelve-hour shift.

I think it will be generally admitted from a consideration of this case that the philosophy, if I may use the term, of hours and wages, or their economic bearing, is a most intricate problem. If other cases were taken it would appear still more intricate. It would be a great mistake to generalise from a single experience and say, for instance, that shorter hours and lower wages both confer an economic advantage. With the first I have dealt in the previous chapter. The alkali case illustrates what I said about the disadvantages of longer hours, particularly in relation to the twelve-hour shift. One is clearly entitled to draw that inference from the fact that, in spite of the higher pay, it takes eleven men in America to do the work of ten in England. They doubtless flag. That it takes two more in Germany is probably explained by their more leisurely method of working. So far as hours are concerned, therefore, the lesson to be drawn is in accordance with the principles already laid down and of general application. But the same cannot be concluded with regard to wages. Granted that in this case the German manufacturer is helped by low wages and the American handicapped by high ones, it is not permissible to draw the general conclusion that lower wages are always a help and higher ones a handicap.

Once more we are driven to the Aristotelian mean. There is excess and deficiency of wages, as of hours. I know that some economists are ready to prove that in the end wages are entirely regulated by the law of supply and demand, like the price of other things. In the end, perhaps, they are, but it is one of those ends that never come, which is another way of saying that within the law there is a margin — a considerable margin—for variation which is determined by other factors. Far be it from me to cavil at anything

so venerable and imposing as the law of supply and demand or to deny that it applies to labour as to other commodities. Broadly speaking, the price of labour rises when and where demand exceeds supply and falls under opposite conditions; but the actual level is often determined by other factors. Apart from that, however, and within the operation of the law, a fallacy is often concealed by external appearances or by words. Labour may be plentiful and cheap, but it may be bad economy to buy it cheap For what an employer wants is not labour but the result of labour, and if he buys too cheap he will not get it; just as a man who buys a coat may buy too cheap. What he wants is not a coat, but warmth or the result of a coat, and if he buys too cheap he does not get it. Cheap labour may be dear through want of capacity or of will. The former is generally recognised, but the latter is often overlooked. Wages are the incentive to work, and must be adequate to produce it. This is the real meaning of the "living wage". Men may be forced by their necessities, in accordance with the law of supply and demand, to work for wages below a standard which they consider acceptable and call a living wage. Some term this the "higgling of the market," and uphold it as based on economic principles; others call it "sweating," and denounce it as opposed to human principles. There is a great deal in a name—a great deal of prejudice, blindness and confusion of mind. The economic and the human principles are really the same, because economics deal with human beings, which economists often forget. Labour so purchased is apparently cheap, but being unwilling it is really dear and false economy.

Adequate wages are a good investment not only for the employer, but for the country. They increase national strength. Let me give an instance.

When one of the transports was leaving the Albert Dock on the Thames, in the early stages of the South African war, an elderly docker, who had been working on her and stood by me as we watched her pass into the river amid cheers for the troops who crowded her deck, said to me: "We've got to see this thing through, and, dammy, I'd go myself sooner than this old country should get knocked. If we don't see it through every foreigner will spit in our

faces, and we don't want this country to be governed by foreigners. It is a good country, where a man can earn a fair day's wage." Now that is the spirit which pulled us through the war and it never wavered or faltered for a moment among the mass of the people from one end of the country to the other. It had nothing whatever to do with politics. The people took no interest in the matter until Mr. Kruger's ultimatum and then they saw instantaneously that if we did not "see it through" every foreigner would "spit in our faces". And they were content enough with the country to find it worth fighting for, down to the very lowest class of labour, to which my friend belonged. It was willing service that they gave and therefore good value for the money.

What applies indirectly to the country applies directly to industrial concerns. Wages, I repeat, are the incentive to work, and if the work is to be adequate the incentive must be adequate. Employers often fail to realise this. The complaint of the men is well founded. A manufacturer, hard pressed by competition, seeks to reduce cost of production, and the item which lies readiest to his hand is the wages bill. He cuts it down or tries to cut it down. The step may be unavoidable; it sometimes is; but often it is not, as the result of some of the greatest strikes has shown. It is truer economy to make it the last instead of the first thing to touch. A German textile manufacturer recently worked the thing out for me in figures. I did not put it to him in that way, but I asked for some information which led him to make a minute analysis of the cost of production in his business. The result surprised him, and he told me that manufacturers in the same branch of industry have only the vaguest idea of the relative importance of the many items that make up the cost of production. It is a complicated and laborious task to work them out in exact detail, and he had never attempted it before. He found that a 10 per cent. reduction of wages was only equivalent to one farthing a yard, or 1 per cent. in the price of the finished product. The conclusion he drew was that wages were the last thing they ought to touch in attempting to reduce cost.

I submit, then, that wages may be too low—economically

too low, I mean, because humanly too low. But they may also be too high, economically and humanly. They are obviously too high in the American alkali industry, cited above, and in some other American industries. Shipbuilding is a conspicuous example. American shipbuilders cannot compete mainly because of the excessive cost of labour. Mr. D. C. Cummings, of the Iron and Steel Shipbuilders and Boiler Makers' Society (British Trade Union), states that the average wages of time workers in American yards are 75 to 100 per cent. higher than in British yards,[1] which contrasts remarkably with the 35 to 45 per cent. of Mr. Barnes in the closely allied engineering trades. I do not know why labour should be so disproportionately dear in American shipbuilding; perhaps it is because most of the work is of a highly skilled character and the supply of competent immigrant workmen is less than in other trades because they have plenty of work at home. There is, however, no doubt about the economic disadvantage which is entailed in this case. Another instance is afforded by the cotton mills of Massachusetts. The great strike at Fall River in 1904, described as "the greatest disturbance which the textile industry of America has ever known," was due to the necessity of reducing wages. The employers contended that they had for a long time made no profits, or were actually working at a loss, and they proved the case from their books. It was proved still more conclusively, to my mind, by the result; for after holding out for six months the men accepted a large reduction.

In saying that wages may be too high humanly I refer to the moral effect on workmen, who may get spoilt and become lazy. I draw an illustration from the same field as that used to illustrate the advantage of adequate wages. When the despatch of troops and guns to South Africa was being carried on at high pressure, a number of dock labourers at the Albert Dock, who were being paid two shillings an hour for merely sweeping, refused to work any longer one evening on the ground that it was raining or too cold, I forget which. I witnessed this incident myself, or I should have some difficulty in believing it. But "spoiling'

[1] Report of the Moseley Commission.

is a familiar process of daily occurrence and workmen are no more exempt from it than any other class. It is seldom taken into account in their case because they are not supposed to reach that level of financial surplus at which spoiling begins. In the main that, no doubt, is so; and the point at which industrial efficiency is impaired by failure of incentive occurs more often through deficiency than through excess of gains. But the latter does occur. Welsh miners, who only care to work three or four days a week, because they earn in that time as much as they want, are an instance. Playing two or three days a week in addition to Sunday may be defended on other grounds; but I am concerned with industrial efficiency, and it cannot be denied that a man who works six days a week is industrially more efficient than one who works four days, provided that the rest is not needed to recruit exhaustion; and no one pretends that it is. Similarly, men working on a minimum time-rate, who refuse to increase their pace, when they could easily do so, in order to earn a higher wage, are less industrially efficient than those who increase it. The incentive fails with them, and they are clearly overpaid, from the point of view of efficiency, for if they were not, the incentive to exertion provided by the chance of earning more would operate.

Wages, then, may be too high or too low. The standard constituting the mean between excess and deficiency is evidently not determined by some universally operating economic law, except in that end that never comes; for if it were the mean would always be reached, whereas we know that the actual conditions diverge frequently and extensively on one side or the other. Doubtless many factors are concerned and among them not the least important is the character and temperament of the workmen. The standard will obviously vary with different individuals and different races as well as with different external conditions. The more active and ambitious a man is the higher the incentive that he needs and can bear. This brings us to the question of the mode of payment or of remuneration, which is not less important than the amount.

It follows from what has been said that differentiation is necessary for securing efficiency. There must be some

means of adjusting the incentive to the individual. If a number of men differing in capacity are all paid at the same rate some will certainly be underpaid and others probably overpaid. I have no doubt at all that many men in England are underpaid. By underpaid I mean that the incentive is inadequate to get from them the best of which they are capable. There is nothing sordid in this. No man works—or does anything else for that matter—without an incentive; and I am not at all sure that money, up to a certain point, is not just as "high" an incentive as duty, self-respect or pride in work; indeed it is identical with duty and self-respect, for a man's first duty in this world, be the next what it may, is to earn his own living. And even those who take a pride in doing good work for its own sake are helped and stimulated by the recognition implied in higher pecuniary rewards. It is, therefore, no reflection on any workmen to say that they would work better if they were better paid. And many workmen in England are in that position. I should not venture to be so positive about it if I had not good warrant for the opinion from the quarter where it would be least expected. In the ship in which I came over from America there happened to be five English manufacturers, who had been in America partly on business and partly for the purpose of studying industrial conditions like myself. They represented iron and steel, small arms, cotton, wool, and, I believe, machinery. I am not quite sure about the last, but at any rate they included several great industries. One of them had large interests in cotton-seed oil mills in the States. They were good enough to invite me to a conference on the subject of English and American industrial methods; and we discussed it for a couple of hours. Among other things I asked this question, "How are you to get more work out of the men at home?" and the answer came prompt, "Pay them better".

This unequivocal answer entirely agreed with what I learnt from English workmen in America, with whom I had many conversations in different places and various industries. They fully admitted putting more energy into their work than at home, but were somewhat puzzled to explain it. When closely questioned, however, they always

came back to the earnings and one man put his finger very neatly on the central point. He admitted that the higher cost of living swallowed up the greater part or the whole of the difference; "but," he said, "they like handling the money". That is according to human nature and a true diagnosis.

But to apply the lever with advantage it must be properly adjusted. If wages are to secure or increase efficiency they must be earned. Here lies the difficulty which is at the bottom of nine-tenths of the labour troubles. Wage-takers are always ready to handle more money, but they are not always ready to earn it, particularly in England. The criticism of his English workmen, made by an American manager and quoted in the last chapter, will bear repeating: "They are always coming and asking for an advance of wages, but they are not so ready to earn it. I say to them 'Prove to me that you are worth it and you shall have it,' but that is what they won't do." On the other hand wage-payers are always ready to get more result from the workers, but not so willing to pay for it. Hence a perpetual struggle. It is bad economy, whereby the strength of both parties is wasted. The ideal condition, economically, would be an automatic mechanism which would exactly adjust the incentive to the individual or the wages to the work, thereby eliciting the best of which each is capable. This would be equally advantageous to the wage-taker and the wage-giver and to the community to which both belong, because there would be no waste. Its perfect realisation in industry is no more practicable than any other sort of perfection, but some methods of remuneration come nearer to it than others, and their comparative bearing on efficiency can be gauged accordingly.

It is obvious that of all methods the furthest removed from the ideal is that of time wages at a uniform rate. It pre-supposes an equality which has no existence, and it is therefore based on a false principle. The more skilled the work the more false the principle. That becomes clear if the most highly skilled occupations, which are those requiring the greatest mental effort or the rarest natural gifts, are considered. In these the reward transcends pecuniary remuneration altogether and cannot be measured at all; it

is purely personal. When power and fame, the approbation, the confidence or the love of one's fellows, the satisfaction of conscience and the sense of duty are among the earnings, the very idea of equality is out of the question; it becomes unthinkable. The individual diversity thus plainly revealed in the higher occupations and their rewards extends in some measure throughout the scale, but becomes less as we descend into the regions of manual labour until we reach the lowest strata of unskilled work. Here there is least room for variation in the value of services rendered, and therefore least waste of potential energy through failure to elicit it by varying incentives. In the most unskilled labour the value to the community of one man who can do the work at all is most nearly the same as that of another, and a uniform scale of payment by time is therefore least uneconomical. In proportion to the departure from that standard it becomes more and more uneconomical. To condemn any men to it who might be subject to another system is to mark them with the brand of inefficiency. The *minimum* time wage is itself a sort of tacit and unconscious protest against a uniform rate, for a *minimum* implies possible variations which are not to sink below but may rise above. In short, time-work should be avoided whenever possible, unless it be adjusted to individual capacity in the manner presently explained.

Piece-work, on the other hand, is as obviously based on the sound economical principle that workers should be paid according to the value of their work. There is and can be no valid objection to the principle as such, but in practice it is less satisfactory. The invincible dislike of piece-work often shown by workers is not without justification. They complain that when a man increases his output by working harder, the employer cuts down the price and reaps the benefit; and it cannot be denied that this has often been done. Such conduct strikes a fatal blow at efficiency; it falsifies the whole principle of piece-work, destroys the capable worker's incentive and takes the heart out of him. Sometimes a trade union fixes a maximum day's work in order to avoid inviting a cut, and it is quite justified in doing so. One remedy is a standard price-list fixed by mutual arrangement and only modified

by mutual consent. This generally presupposes organisation, and the difficulty or impossibility of securing it without, is a very strong economic argument for trade unions. A second ground for objecting to piece-work is that, even with a fixed price-list, bad material or machinery may render it illusory in practice. Other grounds are less justifiable. One is sheer laziness. The shirker, who habitually does as little as possible, is at a disadvantage when earnings depend on work done. He prefers time-work, which he can reduce to time-waste, as far as supervision will allow him. The building trades offer the most conspicuous example of this kind of inefficiency, and it is noteworthy that labour disputes are far more frequent in them than in any other branch of industry. A theoretical objection to piece-work derived from vague socialistic notions of equality, looks better, but is really based on the same motive. It professes the aim of preventing competition and jealousy between workers, but this is the same thing as depriving the more capable and industrious of their qualities and bringing all down to the level of the least capable or industrious. That is not only false economy, but tyranny and injustice. It is idle to put forward such objections to piece-work in the face of its satisfactory working in innumerable flourishing trades. The industrial value of the piece-work method of payment is, I think, clearly shown by the fact that it obtains in those branches of industry in which England retains her superiority, whereas time-work is more common in those wherein she has been caught up and surpassed. Two prominent instances will suffice to illustrate the point, and they are the two greatest of industries—cotton and engineering. I do not suggest that labour efficiency is the only factor, but no one can deny that it is one of the most important; and I do suggest that where the wage incentive has been of such a character as to stimulate the workers to do their best, there the lead which England gained long ago has been maintained, not unimpaired, but still maintained; whereas, under the ordinary time-work system, which does not provide that incentive, but discourages effort, the once still greater lead has been entirely lost.

The inference is strengthened by the results of intensive

piece-work wherein the stimulus of ordinary piece-work is increased by additional rewards. It takes different forms, but generally consists in paying each worker a higher price for each piece or job in proportion to the rapidity and quality of his workmanship. This automatically adjusts the incentive to the individual who has before him the choice of earning more or less according to capacity and industry. It is undoubtedly a most effective method of payment; it encourages workers to do their best, remunerates them directly for extra effort, pays the employer and benefits the whole concern on which both depend. The employer is able to pay higher wages for quicker work, because he gets a larger output for the same machine cost. He divides with the worker the advantage accruing from the difference.

A striking illustration of the successful application of the method is furnished by the cotton trade. Oldham is by far the greatest cotton-spinning centre in the world, and its prosperity in recent years is generally attributed to the adoption of a speed list in 1876. Payment is by result, calculated from a certain standard of speed, namely, 3 draws in 50 seconds; for each second less so much is added to the earnings, being one-half the advantage of the difference arising from the increased speed. At Bolton the price-list is calculated in a different way, but the same principle enters into it. I have said before that no workers in the world surpass the Lancashire operative spinners in skill and industry; no other spinners can compare with them. It is impossible to doubt that the incentive offered by the method of payment is largely responsible for their extraordinary efficiency and consequently for the retention of superiority in this great industry. It is responsible for another thing, and that is smooth working and the avoidance of disputes. With this example before us it is idle to talk, on the one hand, of piece-work as essentially bad for the workers, or, on the other, of trade unions as bad for industry, for the Lancashire cotton spinners are the most highly organised of all workers.

Piece-work is not applicable to all trades; that is to say, it is not convenient to calculate wages on that basis, though of course in all cases the thing paid for is the re-

sult, not the time spent on it, and in time-wages some estimate of the piece value of time is implied if not consciously realised. When machinery is running the ratio between time and result is generally regular enough to permit of its being reduced to a formula by a carefel analysis of the operations. If this be done each can bu expressed in terms of the other, and then the intensive or differential rate can be applied to time-work just as well as to piece-work. The two are interchangeable. In the Oldham spinning mills the output is calculated from the time and the differential rate is assessed by extra speed, so that actually time wages are paid for piece-work. It is possible to reverse the process and pay piece wages for time-work. This is, in effect, what is done under the premium or premium bonus plan, which is now largely adopted in engineering and machinery works. The men are normally paid so much by the day or week, that is to say, they are on time-work, and in England, at least, they have a standard week's wage. This implies a certain output. All that has to be done to apply the intensive principle is to fix the relation between time and output more precisely and to offer additional pay for curtailment of the standard time required for a given result. The principle is exactly the same whether the measure be the piece or the time; in the one case the premium is paid for more output in a given time, in the other for less time expended on a given piece. The difference lies merely in the method of calculation, which depends on the nature of the work.

These several modes of payment, however, do not exhaust the question of remuneration, and it is necessary to consider what is commonly called "profit-sharing".

The term is generally applied to the distribution among wage-earners of part of the net profits of an undertaking, but this use conceals an economic fallacy. The conception of "net profits" is bound up with the old fallacious view that the remuneration of labour is on the same footing as the cost of raw material, power and plant—a fixed charge in the cost of production, which is to be kept as low as possible. It is fallacious, because it ignores the human element, and in practice it has long been abandoned. All changes, up or down, in rates of wages, made on the ground

of the state of trade, whether by sliding scales or conciliation boards or simple demand on either side, rest on the principle of profit-sharing. So does a general bonus on the output.

The truth is that every productive concern, carried on by more than a single individual, is, in fact, a co-operation or co-partnership; the several persons combine to produce a certain result. Before the rise of the "factory system" it was not so. A manufacturer gave out materials to various individuals who worked on them at home and sold the result to him; their relations were purely commercial and individual; there was no more common interest than in any other buying and selling transaction. In modern manufacturing a varying and often a very large number of persons are engaged together on a common object. The "factory system," so far from being the enemy of collective industrial action, is, in truth, its realisation. When that fact is generally recognised we shall be on the road to a just and therefore stable adjustment of industrial relations. And we are coming to it, of which profit-sharing is a sign. In practice, when properly carried out as it has been in a number of cases, it merges automatically into co-partnership; there is no fundamental distinction between the two, only one of degree.

At present, however, the meaning and function of profit-sharing is often imperfectly or erroneously understood. It is considered as an alternative to wages, or an act of benevolence, or a means of reconciling the recipients with otherwise unsatisfactory conditions. The existence of the last view among employers is the cause and justification of the half-instinctive but determined dislike and suspicion of profit-sharing entertained by many workmen, who are enthusiastically in favour of co-operation or co-partnership. *Timeut Danaos*, and not without reason. It is a bogus profit-sharing that they fear; the genuine article is co-partnership, in some degree at least. Thus, the Gas Workers' Union in England was bitterly opposed to the profit-sharing scheme introduced by the South Metropolitan Gas Company, but the opposition died away when it was perceived that the scheme was really co-partnership, involving not

only a share in the property, but a voice in the management,[1] while leaving the wages intact.

Regarded in this light, profit-sharing is seen to be neither a benevolent dole nor a substitute for wages, but a completion of them, and as such it serves a particular function in the conduct of an industry. It does not affect the principles previously discussed; in particular it does not replace the adjusted incentive. That becomes quite clear if we examine profit-sharing in its most complete form, namely, that in which the workers are the sole proprietors and all on an equal footing; they thus pay themselves out of the profits, which are either equally divided or not. If the former, then the state of things is reproduced in which the more capable receives the same remuneration as the less. It is not so bad economically as the ordinary capital-and-labour time-wage condition, because the earnings of all alike depend directly upon their own exertions; but it does not differentiate between individuals according to capacity. This is, no doubt, a merit from a certain point of view, because it tends to that equality for which socialistic theory yearns. I am, however, concerned not with an ideal, but with the actual state of things, in which men are neither equal nor content to be treated as if they were. Suppose—and it is not a far-fetched supposition—that A, B, and C co-operate, and A does as much work as the other two, but only receives the same share of profits. In that case he does not get what he earns, while B and C do not earn what they get. It is not a stable arrangement, and sooner or later the economic principle of the adjusted incentive asserts itself. A either insists on having a larger share of the returns or he declines to do more work than B and C, and his efficiency is impaired. In other words, the wage question still crops up. If the profits in such a co-partnership are not equally divided, the question of division is virtually that of differential wages.

I have here put the point hypothetically in the simplest form for the sake of clearness, and do not mean to suggest that three men could not work together with unequal

[1] This does not mean interference in the management of the works, which no shareholders possess, but representation on the board of directors.

ability for equal shares in the results; in such a small party other motives may be strong. But among a large number self-assertion invariably arises and demands the differential treatment of varying capacity. The failure of so many attempts at co-operation on a basis of equality is largely due to that cause.

Profit-sharing, therefore, does not dispose of the questions that arise in connection with wages, and the same criticism applies to the plan which has been advocated by M. Yves Guyot,[1] and is called by him the commercialisation of labour. It consists in the manufacturer contracting with a trade union or unions for a certain quantity of production at an agreed price. He provides premises, plant, raw material and skilled supervision, the union provides and pays the labour, with which the manufacturer has no direct relations at all. The idea is ingenious and attractive and deserving of more attention than it has received. In essence it is a return to the ante-factory relations; it abolishes the ordinary causes of friction between labour and capital and hands them over to the trade union, including the method of remuneration, which otherwise remains untouched. The problem of getting the best work of which they are capable out of the men would then rest with the union. The weak point about it is that it lacks the distinctive advantage which attaches to profit-sharing. This lies in giving to the wage-earners a direct interest in the success of the undertaking as a whole, which is quite a different thing from the differential incentive of the individual. The latter elicits the best efforts of each man by paying him accordingly, but it offers no incentive to him to promote the interests of the whole by care of machinery, for instance, or by economy of power or raw material. It may even lead him to be particularly extravagant or careless of these things in the effort to increase his own output. A striking illustration of this tendency occurred on the Prussian State railways. Premiums were paid to men for economy in coal—premiums for economy are, of course, a variation of premiums for speed or output—and it was found that some of them were in the habit of stealing coal

[1] *Les Conflits du Travail et Leur Solution.*

at night from the railway depots in order to earn the premiums; in other cases they failed to keep scheduled time from the same motive. Now a direct interest in the concern as a whole obviates this tendency. It has the further advantage of reducing the need, and the expense, of supervision.

I submit, therefore, that a thoroughly effective method of remuneration includes both principles—(1) the differential incentive, which acts on the individual as such; (2) profit-sharing which acts on him in his collective capacity as a member of a body bound together by common interests and working for a common end. By increasing the efficiency of labour they diminish its cost and so increase profits, although wages rise. I admit that the practical application of these principles—and particularly that of profit-sharing—presents difficulties; but they are not insuperable, if the problem be approached with understanding and goodwill. The mode and degree of application must vary with the circumstances which demand the most elastic treatment. The attempt to lay down a common formula for the precise share of profits that ought to come to "labour" in all industrial enterprises may be an interesting exercise of the mind, but it bears no relation to the actual conditions of life.

It remains to consider the comparative application of the principles discussed in the three countries. Upon this point information is too defective to permit of a dogmatic utterance. The principle of the intensive differential rate is supposed to be an American invention; but I have shown that it is not so. It was in operation in Lancashire (like most other industrial devices) before it was taken up in America. Nevertheless there is, I believe, more readiness to recognise and apply it in America than in England. It is not true that price-lists for piece-work are never cut by American employers; I have met with cases myself and have read of others;[1] but it certainly appears to be less common than in England. The principle of getting the best out of every man on the one hand and of giving every man the fullest opportunity to make the best of himself on

[1] See *The Social Unrest*, by Graham Brooks, p. 183.

the other is more in consonance with the American than with the English spirit. There is more alacrity to apply it on the part of employers and less opposition on the part of the men or of the trade unions. A leading English trade unionist has said on this point: "It is inconceivable that workmen would refuse to increase their earnings if they had a chance of doing so;"[1] and so any one might suppose. But they sometimes do, notwithstanding. The premium plan of payment has met with isolated opposition in America, but it is in England that a great federation of trade unions has pronounced a solemn condemnation of it. In 1904 a committee was appointed by the Engineering and Shipbuilding Trades' Federation to report on the system which had been introduced into the royal dockyards and into some private works. The report was an unqualified and unanimous condemnation on the ground, among other objections, that the "system was an adaptation of the most pernicious and degrading condition of employment in modern industrial history, the task system, and created jealousy and ill-feeling". Fortunately for British industries the view of the committee was not entertained by the Amalgamated Society of Engineers, which had previously agreed to the system, and the report does not appear to have had much practical effect in preventing its adoption, though the English and Scottish Ironfounders' Societies have made a compact to oppose it. In short, it is making its way, though less rapidly, so far as I can gather, in England than in America. That the differential principle will continue to spread in one form or another there can be no manner of doubt. The contention that it is degrading for a man to use his powers to the best advantage and get fairly paid for it is too contrary to reason to prevail long with any men but shirkers or dreamers. And if reason fails economic pressure will enforce the principle both on employers and employed, just as it is steadily shaping the course of labour conditions in the direction of shorter hours and higher pay. It is economic pressure at the back of organised labour which has forced employers out of the blind way of keeping men at work as long and paying

[1] G. N. Barnes, *The Engineering Magazine*, January, 1901, p. 564.

them as little as possible; and the same pressure at the back of employers is forcing men out of the equally blind way of doing as little and trying to get as much as possible. Industrial victory will rest with those who most fully and speedily recognise the situation.

With regard to Germany I have not enough information to make a decided comparison, even in general terms; but events are certainly moving in the same direction there. The two movements of shortening hours and raising wages have long been in progress. Some evidence on both has been collected by Professor Ashley,[1] and some more by the United States Labour Bureau.[2] I have other material that might be added, but will content myself with an interesting case, which well illustrates the movement. In a Prussian mill which competes successfully with Bradford and Lawrence, and sells its goods in the English and American markets, the weekly hours in 1895 were $64\frac{3}{4}$, and the average earnings of male workers were 21·42 shillings a week; in 1899 with the same hours the earnings had risen to 23·58 shillings; in 1903 the hours were reduced to 60 without any diminution of earnings; in 1904 the mill was working short time, namely 54 hours, yet the earnings were then precisely the same as they had been with $64\frac{3}{4}$ hours in 1895.

The movement, so clearly shown by this case, is general; but so far as I can learn the intensive principle, though well understood, has not yet made much way. Perhaps it has not been necessary. The strength of the German people, as I have several times pointed out, lies rather in the maintenance of a uniformly good standard of capacity and performance than in eliciting exceptional talent. There is less need for suppressing the shirker and less scope for stimulating his opposite than in England and America. The sense of duty is stronger, the habit of faithfully performing a given task is more general, and individual aspiration much less marked. But with the diminution of hours, increase of wages and changes in the relation between capital and labour brought about by organisation and

[1] *The Progress of the German Working Classes*, by W. J. Ashley.
[2] *Bulletin of the Bureau of Labour*, No. 54. September, 1904. See also *Die Deutschen Städte*, by Dr. Wuttke.

socialistic teaching, the old order will not permanently suffice to meet the increased competition effected by intensive methods of production elsewhere; the speed must be increased and the incentive adjusted accordingly. This is the price paid for shortened hours and higher wages, and there is no escape from it. When the Germans follow suit in this matter they may confidently be expected to do it more thoroughly and systematically than anyone else. They will take more pains to work out their time schedules and differential rates with precision, and will miss nothing that may conduce to the end in view. The theory of remuneration is already more discussed there than anywhere else.

Profit-sharing is a more difficult matter, and it appears to be making very little way in any country in spite of some prominent examples which have been very frequently described, notably the South Metropolitan Gas Company in London, and Zeiss, the firm of optical instrument makers in Jena. According to reports made to a co-operative congress in 1902 there were then seventy-five cases in England, forty-two in Germany and twenty-three in the United States. The last did not include the case of the United States Steel Corporation, which is the largest scheme of the kind yet attempted; it was introduced in the winter of 1902-03. A large scheme has also been introduced in the cotton industry at Fall River since the strike of 1904.

Probably the list is defective, but when allowance has been made for that it is evident that the thing is as yet on too small a scale to exercise any perceptible influence. I venture to think, however, that it will increase and that England, which leads at present, is likely to prove the most favourable soil, because the organisation of employers and employed is much more advanced, their relations are better and the facilities for arriving at a mutual understanding, which is essential to any considerable extension of the system, are superior in England. I do not ignore the fact that up to the present time more failures than successes have been recorded and that much opposition exists on both sides; I attribute both failures and opposition to misunderstanding of the principle and misuse of the practice. If profit-sharing is regarded as an act of

paternal, and therefore arbitrary, benevolence, or as a weapon against trade unions, or a means to any other ulterior end,[1] it is sure to fail and to excite distrust and hostility. The only sound basis is the economic one, which I have endeavoured to explain. On that basis it becomes mutually advantageous, because it gives effect to the real relations of employers and employed, who are actually partners in production. The term "profit-sharing" is in itself a great stumbling-block; if "product-sharing" were used half the difficulty would vanish. The subject is, however, too large to be treated properly here, and these speculations are taking me too far afield. Some further remarks on the relations of employers and employed will be found in the chapter on Trade Unions.

[1] The scheme of the United States Steel Corporation is said to have been partly a financial manœuvre, intended to improve the market value of the preference shares, which were bought and offered to the employees. It was probably also intended as a bulwark against the trade unions.

CHAPTER IX.

WORKMEN'S COMPENSATION AND INSURANCE.

THE well-being of workers—it is a pity we have no other words than worker, workman, working-man, working-class or their equivalents in other languages to signify those who are engaged in manual occupations—the well-being of this class depends on many things besides their financial circumstances, and the latter depend on many things besides wages. It is impossible for me to discuss all of them, but some cannot be omitted, and one is the special provision made for this class against misfortune by accident, sickness or other cause of infirmity. The subject discloses a far greater discrepancy between the three countries than any point we have yet discussed, and a comparison which did not take account of it would be so defective as to give a false impression of the relative conditions of life prevailing in them. Germany here stands quite alone by reason of its unique system of State insurance, which is made up of compulsorythrift, State aid and employers' liability. No one can doubt that the general well-being of the working classes in Germany, which is strikingly visible to the eye and confirmed by vital statistics in spite of many unfavourable circumstances, is in a large measure due to the insurance system. Its operations extend far beyond the factory workers, with whose circumstances we are chiefly concerned, and far beyond their relations to the factory; but the several parts of the system are so bound together that they must be taken as one whole. I shall therefore state the main facts about this great institution, but shall make no attempt to discuss it from the actuarial point of view, which presents great difficulties. One of the most accomplished of insurance statisticians, in charge of one of the

largest insurance businesses in the world, and himself of German origin, confessed to me that he had tried to understand it but could not.

Excepting life insurance, which is a form of investment with a certain return, ordinary insurance is a sort of wagering on chances; the insurer bets that he will have a fire or an illness or an accident, or whatever it may be; the insurance office lays long odds that he will not; and since the office takes care to calculate the chances in its favour, they are against the insurer, who must expect to pay his share of the profits made by the insurance company. It differs from other betting in that its object is positive security against loss, not a problematical gain. The insurer buys peace of mind, but on the wager he must expect to lose. State insurance, however, stands on a different footing, and when some one else pays the premium the insurer clearly stands to gain. That is the case with the German workman; and in so far as he contributes himself the insurance is a form of compulsory thrift which has a good moral influence even if he never has occasion to draw the insurance money. Presumably those who do pay the premium are buying the efficiency and contentment of labour. Whether they get their money's worth or not is another question, to which I shall return after giving an outline of the main provisions of the system.

There are three branches of compulsory workmen's insurance—(1) sickness; (2) accident; (3) infirmity or invalidity. The first is directed against temporary incapacity through illness, the third against permanent incapacity through old age or chronic infirmity, while the second comes between them and partakes of the nature of both. It provides prolonged maintenance and means of restoration in temporary disablement through accident, permanent maintenance in permanent disablement from the same cause, and assistance to widows and orphans in case of death. In the last point it goes beyond the age and infirmity allowance which ends with the life of the insured; on the other hand it only covers accidents sustained in the course of occupation, whereas the old age and infirmity provision covers all cases.

Sick Insurance.—General compulsory insurance of

workmen against sickness dates from 1883. Previously such insurance had been to some extent regulated by law, and provincial governments possessed the power of making it compulsory; but for the most part it remained voluntary, and was effected through registered societies. The law of 1883 made it compulsory on all persons in a dependent position working regularly for wages in manufactures, commerce, and trades; and further gave local authorities the power to make it compulsory on other classes not coming under this description, such as persons temporarily engaged, apprentices, domestics, and agricultural labourers. The law has subsequently been amended and extended. The insurance is effected through a number of different channels, some public, others private. The idea is to encourage the internal administration of the business by those who have a common interest either of locality, occupation, or class. Consequently different branches of industry—mines, manufactures, building trades, and hand trades—have their own series of insurance funds, which may be single or associated in larger or smaller groups; and there are also the old registered societies. All these form specialised branches of insurance. Then, to cover the remaining industrial population, there are general public insurance funds established for the separate localities, grouped in districts (*Ortsversicherung*); and if these are inadequate the local corporation itself becomes the insurance office (*Gemeinde-versicherung*). Each individual need only be insured in one office. The aggregate number of authorised sick insurance funds in the Empire is over 23,000, and of persons insured in them between nine and ten millions. The rate of contributions depends on the rate of earnings. It varies from 2 to 3 per cent. of the average earnings of each class of workmen; but in the case of the *Gemeinde-versicherung* it is from 1½ to 2 per cent. of the wage customarily paid in that locality to the ordinary day labourer. Two-thirds of the amount is payable by the person insured and one-third by the employer. The benefit is payable for not more than thirteen weeks; it includes medical treatment, drugs, etc., free, and sick pay beginning from the third day of incapacity, or free treatment in a hospital with half-pay for the sick person's family. Mothers

are entitled to the same for four weeks after confinement. The legal *minimum* of sick-pay is one-half the previous earnings.

The following table gives the chief statistical details for the six years ending 1901 :—

Year.	Persons Insured.	Cases of Illness.	Days of Illness.
1896 . . .	7,944,820	2,763,757	47,608,226
1897 . . .	8,337,119	2,964,937	51,513,783
1898 . . .	8,770,057	3,002,593	53,201,173
1899 . . .	9,155,582	3,476,067	60,406,683
1900 . . .	9,520,763	3,679,285	64,916,827
1901 . . .	9,641,742	3,617,022	66,652,488

Year.	Revenue.	Contributions.	Payments.
1896 . . .	£7,790,491	£6,332,810	£6,112,689
1897 . . .	8,390,503	6,774,335	6,699,989
1898 . . .	9,025,130	7,262,030	7,144,571
1899 . . .	9,734,104	7,735,570	8,084,980
1900 . . .	10,480,976	8,302,299	8,825,377
1901 . . .	9,184,431[1]	8,567,663	8,902,959[1]

Accident Insurance.—The State system of insurance against accident belongs to the same period of social legislation as the sick insurance. Both were due to the action of Kaiser Wilhelm I., who took a profound interest in the subject, and persisted, no doubt under the advice of his Chancellor, in urging legislation upon the Reichstag in a series of Royal messages, until the difficulties were overcome and the project passed into law. This was accomplished in regard to accidents in 1884, after some previous unsuccessful attempts. The law then passed was extended in 1885, 1886, and 1887, and further amended in 1900. Previously compensation for injuries had been regulated by the Liability Act of 1871, under which railway servants were entitled to such compensation unless the employer could prove unavoidable causes (*höhere Gewalt*) or the fault of the injured, and persons employed in mines, quarries,

[1] Method of reckoning changed.

and factories were entitled to it if they could prove negligence on the part of the employer or his representatives. The amount of compensation lay within the discretion of the Court. That was all changed by the new legislation. The burden of proving liability only rests now on the injured in cases of intentional injury or for amounts exceeding the regular insurance payment. There are four classes of occupations (1) industry; (2) agriculture; (3) building; (4) marine. These are all covered by one general law but each has its own variations; and there are special provisions for (5) prisoners and (6) Government officials. "Industry" includes all workmen and officials with a salary not exceeding £150 a year who are employed in mines, quarries, wharves, docks, factories, breweries, smelting works, wells, post and telegraph offices, railways, military and naval establishments; also brick-layers and masons, smiths, chimney sweeps, window cleaners, butchers, carmen, porters, cellarmen, and warehousemen. The other insurance classes do not concern us. Insurance is effected through trade associations of employers formed in specified districts, larger or smaller. These corporations have a legal personality and considerable powers of self-government; every employer affected by the law is a member of the local association embracing his trade. Disputes fall within the jurisdiction of local arbitration courts, and the whole system is under the supervision of an imperial office which is composed of permanent and temporary members; the former, together with the president, are appointed for life by the Crown on the nomination of the Federal Council; the latter number eighteen, of whom six are chosen by the Federal Council, six are delegates of employers, and six delegates of workmen. The insurance funds are formed by contributions from the members of the trade associations in proportion to the salaries and wages paid in their business.

There is no claim for compensation when an accident is intentionally caused by the injured person; and the claim may be wholly or partly refused when the injured person has contributed to an accident by a criminal act or by intentional wrongdoing. Otherwise compensation is payable as follows:—

(*a*) In case of injury: (1) free medical treatment, drugs and any appliances medically required, such as crutches; (2) an allowance so long as the injured is unfit to work; in case of complete incapacity the allowance is 66⅔ per cent. (that is, two-thirds) of the previous annual earnings and is called "full allowance"; in case of partial incapacity it is in proportion to the impairment of wage-earning capacity sustained and is called "part allowance"; (3) when the injured is rendered not only incapable of work but totally helpless, the allowance is increased up to the full amount of the earnings; (4) if the injured was already at the time of the accident permanently incapable, compensation is confined to medical treatment; but if such a person is thereby rendered totally helpless an allowance up to half the "full allowance" is payable; (5) so long as the injured remains out of work in consequence of the accident and through no fault, the part allowance may be raised to full allowance by the association. Allowances begin after the lapse of thirteen weeks from the time of the accident. During that period the case comes under the sick insurance, which consequently deals with all minor injuries; but from the beginning of the fifth week it is provided that the sick pay shall be at least 66⅔ per cent. of the previous earnings, and if the sick fund to which the person belongs pays less than this, the employer in whose business the accident took place has to make good the difference. If the injured belongs to no sick fund the employer has to take its place during the first thirteen weeks; or the association to which he belongs may fulfil this duty.

(*b*) In case of death the compensation is: (1) burial money of not less than 50s., otherwise one-fifteenth of the annual earnings; (2) an allowance to the family, which varies, according to circumstances, from 20 to 60 per cent. of the annual earnings. A widow is allowed 20 per cent. till her death or re-marriage, and each child 20 per cent. until the age of sixteen; other dependent relatives may also get 20 per cent. if in want; but the total allowances are not to exceed 60 per cent.

Some observations will be in place here. It will be noted that the burden of compensation for accidents is shared between the sick insurance, to which the workpeople

contribute, and the accident insurance, to which they do not; and since all cases of injury come under the former, whereas many never reach the fourteenth week, when the accident insurance steps in, it may be, and has been argued, that too great a share of the compensation falls upon the workpeople themselves. The Social Democrats have urged that the burden should be differently divided, the employers paying the whole of the accident compensation and the employed the sick insurance. It appears, however, from the records of the ten years 1886-95 that, though the sick insurance deals with many more accidents than does the accident insurance, the burden of compensation falls far more heavily upon the latter, because the cases for which it has to provide are the severe ones. Thus seven-eighths of the whole cost of accidents was borne by the employers' associations. The employers also provide one-third of the sick funds; so that altogether they defray 92 per cent. of the accident charges. Further, it is found that of the payments made out of the sick funds, only $6\frac{2}{3}$ per cent. go for accidents, and $93\frac{1}{3}$ per cent. for sickness. Consequently the advantage accruing to the workpeople from the employers' one-third contribution to the sick fund is much greater than the disadvantage to them of having to pay a very small share of the accident money. Calculated out for the year 1897 the difference in their favour amounted to $35\frac{1}{2}$ million marks; they actually contributed $112\frac{1}{4}$ millions, whereas under the Social Democratic scheme they would have paid $147\frac{3}{4}$ millions. Another advantage accruing to them under the existing system is a certain degree of participation in the management of the employers' association. This takes effect in a matter of great importance to industrial welfare and efficiency, to which I have already referred when dealing with factory conditions. One of the duties of the trade insurance associations is to draw up rules for the prevention of accidents in factories; and in formulating such rules representatives of the workmen have an equal voice with the employers. I have quoted from one of these sets of rules and pointed out their influence in securing good order and clear gangways in the shops.

Another point to be noted is that this State system

obviates the difficulty of the possible bankruptcy of an employer, which is one of the weak points in the English law affecting compensation for injury.

STATISTICS OF ACCIDENT INSURANCE IN INDUSTRIAL OCCUPATIONS.

Year.	Insured.	Total Injured.	Killed.
1900 . . .	6,928,894	51,697	5,108
1901 . . .	6,884,076	55,525	4,979

Year.	Permanently Incapacitated.	Total in Receipt of Compensation.	Total Compensation Paid.
1900 . . .	592	310,105	£2,929,360
1901 . . .	595	319,576	3,365,430

Year.	Injured.		Killed.	
	Persons.	Per 1,000 Insured.	Persons.	Per 1,000 Insured.
1886 . . .	9,723	2·80	2,422	0·70
1887 . . .	15,970	4·14	2,956	0·77
1888 . . .	18,809	4·35	2,943	0·68
1889 . . .	22,340	4·71	3,382	0·71
1890 . . .	26,403	5·36	3,597	0·73
1891 . . .	28,289	5·55	3,634	0·71
1892 . . .	28,619	5·64	3,282	0·65
1893 . . .	31,171	6·03	3,589	0·69
1894 . . .	32,797	6·25	3,438	0·65
1895 . . .	33,728	6·24	3,644	0·67
1896 . . .	38,538	6·72	4,040	0·71
1897 . . .	41,746	6·91	4,252	0·70
1898 . . .	44,881	7·10	4,613	0·73
1899 . . .	49,175	7·39	4,772	0·72
1900 . . .	51,697	7·46	5,108	0·74
1901 . . .	55,525	8·07	4,979	0·72

Year.	Incapacitated.					
	Permanently.				Temporarily.	
	Wholly.	Per 1,000 Insured.	Partly.	Per 1,000 Insured.	Persons.	Per 1,000 Insured.
1886 . . .	1,548	0·44	3,780	1·09	1,973	0·57
1887 . . .	2,827	0·73	8,126	2·11	2,061	0·53
1888 . . .	1,886	0·43	10,270	2·38	3,710	0·86
1889 . . .	2,331	0·49	12,788	2·70	3,839	0·81
1890 . . .	1,869	0·38	16,109	3·27	4,828	0·98
1891 . . .	1,570	0·32	17,481	3·42	5,604	1·10
1892 . . .	1,507	0·30	18,049	3·55	5,781	1·14
1893 . . .	1,377	0·27	19,740	3·82	6,465	1·25
1894 . . .	855	0·16	20,025	3·82	8,479	1·62
1895 . . .	780	0·15	19,312	3·57	9,992	1·85
1896 . . .	595	0·10	20,251	3·53	13,652	2·38
1897 . . .	625	0·10	21,247	3·52	15,622	2·59
1898 . . .	538	0·08	22,348	3·54	17,382	2·75
1899 . . .	581	0·09	23,837	3·58	19,985	3·00
1900 . . .	592	0·08	24,790	3·58	21,207	3·06
1901 . . .	595	0·09	26,158	3·80	23,793	3·46

These figures do not include the agricultural and State sections of the accident insurance system. Ths total number of persons insured in 1901 was 18,866,712: the number in receipt of compensation was 476,260; the compensation paid was £4,927,790.

It appears from these tables that the percentage of accidents entailing compensation has steadily increased since 1886, both absolutely and relatively to the number of persons employed; but by far the greatest part of this increase occurs in the class of minor injuries involving only temporary incapacity. Fatal cases have increased since 1894, and the annual average is higher than it was in the earlier years of insurance. On the other hand, there has been a marked diminution in the number of persons permanently and wholly incapacitated. The diminution is so great that it suggests some change of policy or classification, since it is not accompanied by a diminution of fatal accidents. On the whole the figures suggest that insurance tends to increase accidents or claims. The occupational

groups in which accidents were most numerous in 1901 were: Carriers and carmen, 14·5 per 1,000; timber trade, 12·9; quarries, 12·4; mines, 12·2; building trades, 11; flour mills, breweries and sugar refineries, 11; iron and steel, 10·1. In the textile industries the proportion was 3·5; in leather and clothing, 3·6; and in paper-making and printing, 4·6.

Infirmity Insurance.—The infirmity law is the latest of the insurance provisions made for workpeople by the State, and it is the most comprehensive. It applies compulsorily to all persons over sixteen years of age who work for wages or for salaries up to £100 a year, with the exception of those Government and other public officials who are otherwise provided for. Persons in receipt of more than £100 but not more than £150 have the right of voluntary insurance. This law is a continuation of the previous legislation initiated under Kaiser Wilhelm I., who left the completion of the scheme to his successors. Its preparation was encouraged by Friedrich III. during his brief reign, and was taken in hand energetically by the present Kaiser immediately on his accession. It was passed in its original form in 1889, but underwent considerable revision in 1899, when a new Act was passed which even found favour with the Social Democrats. Its object is to secure an allowance for infirmity or for old age. The condition for the first is incapacity to earn a living lasting at least twenty-six weeks, and for the second the completion of seventy years, whether accompanied by any infirmity or not. In addition it is required that in order to be entitled to either allowance the claimant shall have been insured for a fixed period, which is called the time of waiting; for an infirmity allowance it is 200 weeks if 100 have already been paid, and 500 if they have not; for an old-age allowance it is 1,200 weeks. As part of such waiting time are reckoned the term of military service and any period of inability to pursue a trade through illness. The allowances are reckoned in five classes, according to the annual income of the pensioner: (1) Up to £17 10s., (2) £27 10s., (3) £42 10s., (4) £57 10s., and (5) over £57 10s. The old-age pension for each class is: (1) £5 10s., (2) £7, (3) £8 10s., (4) £10, and (5) £11 10s. The infirmity allowance is reckoned from the following basis for

each class: (1) £5 10s., (2) £6, (3) £6 10s., (4) £7, and (5) £7 10s., to which an addition is made in proportion to the length of time during which insurance has been maintained, namely, 3pf., 6pf., 8pf., 10pf., and 12pf. respectively for every week. The allowances are paid monthly in advance through the post.

In addition to these main provisions payments are made under certain conditions on the occasions of marriage, disabling accident and death.

The insurance fund is provided by regular payments, divided equally between employers and employed, which at present stand at 14pf., 20pf., 24pf., 30pf. and 36pf. (roughly, from 1½d. to 4½d.) a week for the respective classes. The State adds 50s. for each allowance paid. The contributions are paid in by means of stamps, which are on sale at post-offices, and are affixed to cards carried by the insured persons. The stamps are provided by the employer, who deducts half the value from the wages; they are affixed at the time of paying wages and are good for one, two or thirteen weeks, according as wages are paid weekly, fortnightly or quarterly. The insurance is administered by special offices or institutes, established for large districts or for whole States. Each has a president, who possesses the standing of a Government official, and a committee composed of an equal number of representatives of employers and employed (not less than five of each). Each insurance office has attached to it at least one arbitration Court, with an independent chairman, nominated by the Government, and assessors equally representing employers and employed. General supervision is exercised by the Imperial Insurance Office. For persons in the public service who come under the insurance law provision is made by means of special funds.

An important additional point is a provision for insured persons who are incapacitated by illness from earning their living. In such cases the insurance office is empowered to undertake the medical treatment of the sick person in a hospital or sanatorium; and if the person is subject to sick insurance, the obligations of the latter pass to the infirmity insurance, which is reimbursed from the sick fund in proportion to the claims of the sick person.

STATISTICS OF INFIRMITY INSURANCE.

NUMBER OF CLAIMS ALLOWED.

Period.	Infirmity.	Old Age.	Sickness.
1891-1901 (11 years) . .	734,251	389,971	14,309

Period.	Marriage.	Accident.	Death.
1895-1901 (6½ years) . .	742,910	589	164,236

AVERAGE AMOUNT OF ALLOWANCES.

Year.	Infirmity.	Old Age.	Year.	Infirmity.	Old Age.
	£ s.	£ s.		£ s.	£ s.
1892 . .	5 14	6 7	1897 . .	6 8	6 15
1893 . .	5 18	6 9	1898 . .	6 10	6 18
1894 . .	6 1	6 5	1899 . .	6 11	7 1
1895 . .	6 4	6 11	1900 . .	7 2	7 5
1896 . .	6 6	6 13	1901 . .	7 6	7 10

TOTAL PAYMENTS.

Year.	Infirmity.	Old Age.	Sickness.	Marriage.
	£	£	£	£
1900 . . .	2,678,650	1,311,210	32,570	246,950
1901 . . .	3,251,085	1,232,785	64,980	258,175

Year.	Accident.	Death.	Sanatoria.	Total.
	£	£	£	£
1900 . . .	550	83,335	278,915	4,636,465
1901 . . .	945	87,135	356,530	5,263,565

The foregoing bare outline of facts, without any complications, will give the reader unacquainted with the subject some idea of the character and scope of this gigantic

system. Year by year its operations become larger, as the following summary figures for 1902 will show. Under sick insurance nearly 4,000,000 cases received £9,300,000; for accidents 488,000 cases received £5,400,000; for infirmity about 800,000 persons received £6,020,000—total, 5,300,000 persons benefited to the extent of nearly £21,000,000. In 1891 the total amount paid was only £2,030,000. The benefit has therefore increased more than tenfold in eleven years. Of the total amount £2,000,000 was contributed by the State, £10,000,000 by employers, and £9,000,000 by the insured. That is to say, the workpeople received some £12,000,000, or £33,000 a day beyond the amount of their own contributions. That is really a very solid sum and a pretty heavy tax on employers.

I said above that presumably what they are buying is the efficiency and contentment of labour, and asked if they get their money's worth. As an observer, able to regard the situation in perspective and without prejudice, I am strongly of opinion that hitherto they have. Take contentment first. The working classes are not contented, of course; who is? But their discontent in the mass has taken the mildest form of expression—votes for social democratic candidates in the Reichstag elections. I cannot discuss the social democracy here, and will merely observe that its increasing success at the polls is not alarming, for as it succeeds it changes. Its power means something, no doubt; it means legislation in favour of labour, but it does not mean anything revolutionary. In spite of resolutions at congresses, the revolutionary programme is really as dead as the economic theory on which it is based. Like most other economic theories, it has been falsified by the course of events; and those who still believe in it—a dwindling band—are merely running their heads against the solid wall of facts, as such people will. The "Arbeiter Frage" will find no sudden and violent "solution," but a gentle solvent; it will dissolve away, as all such questions do, and give place to another. That the growing strength of trade unions has taken this direction rather than that of interference in the shops is an advantage to employers worth more than can be estimated in money; and I have no doubt that it is in a considerable measure due to the easing

of circumstances and the mitigation of misfortune secured by the insurance laws.

With regard to the efficiency of labour insurance has developed a very remarkable and unforeseen result. The prospect of having a great and increasing number of chronic invalids on their hands has stimulated the insurance offices and societies to a great preventive movement. It was found on investigation that consumption is the worst enemy; and about the same time the open-air cure was coming into vogue in Germany. The enlarged powers given by the Infirmity Insurance Act of 1899 in regard to the treatment of sick persons encouraged the experiment of sending consumptive patients to sanatoria, and the movement has grown with great rapidity. At first, most of the insurance offices sent patients to existing sanatoria and other cure establishments, but some began to build their own, and the demand increased so rapidly that the practice soon became general. According to the report of 1903 there were then between 70 and 80 sanatoria, containing 7,000 beds, for the accommodation of working-class patients under the Insurance Acts. Allowing three months' treatment for each case, they claim the ability to undertake 30,000 cases in a year. The following results are reported:—

Fully restored to work	67·3 per cent.
Fully capable of other work	7·1 ,,
Partly ditto	14·6 ,,
Not able to earn living	11·0 ,,

Or, put in another way:—

Cured or improved	87·7 per cent.
Unimproved	8·7 ,,
Worse	3·1 ,,
Died	0·5 ,,

There is at present great enthusiasm for a system which restores so many workers to a state of health, enabling them to earn their living; and the immediate gain to efficiency is obvious. How it will work out eventually remains to be seen. We do not yet know how long the improved health lasts, or how many contract tuberculosis again. If re-infection is common, the cost may easily become greater than the funds will bear. The system

by which all the funds work in with one another more or less is so complicated, and the permissive powers under the Acts are so elastic, that the outcome cannot be fore-judged; it must be left to expérience. The further and more obscure question of the ultimate effect of systematically preserving the susceptible and enabling them to propagate their susceptibility is too large to be discussed here and too academical. The preservation of the less fit is one of the general results of "civilisation"; but mankind can no more resist the power which draws in that direction than stop the ocean tides. Whither it leads we know not; but one thing is plain. The "ethical process" to which that impelling force is due cannot be opposed to the "cosmical process," as Huxley confusedly put it; they must be one; but what is the cosmical process?

There is nothing in England or America corresponding to the German State insurance, but in England the law makes special provision for compensation to certain classes of persons injured by accidents arising out of their occupation. The Workmen's Compensation Act, passed in 1897, was admittedly inspired by the example of Germany; and it constituted an important departure. Previously, as still in the United States, compensation for injury from accidents could only be obtained under the common law of the land, modified by the Employers' Liability Act of 1880. The object of the latter was to facilitate claims to compensation by removing some of the disabilities existing under the common law. So far, therefore, it did recognise a special right of certain classes to compensation. But in practice it failed of its effect and no more need be said about it, except that proceedings may still be taken under it as an alternative, but not in addition to the Act of 1897. It was never much used and has now passed almost into abeyance.

The Workmen's Compensation Act makes employers directly liable to pay compensation on a scale laid down, "if in any employment to which the Act applies personal injury by accident arising out of and in the course of the employment is caused to a workman". The term "workman" includes every person engaged in the employment, "whether by way of manual labour or otherwise and whether his agreement is one of service or apprenticeship

or otherwise". In this respect the English law appears to go further than the German, which does not apply to officials in receipt of more than £150 a year. The inclusion of all persons employed in the English Act, however, has not the importance that might be attached to it at first sight, for the maximum amount of compensation laid down practically limits the operation of the law to workmen and minor officials.

The employments to which the Act applies are railways, factories, mines, quarries, engineering works (construction or other work on railroads, harbours, docks, canals, sewers, etc.), work on buildings over thirty feet in height, and (by an extending Act in 1900) agriculture.

There is no liability for injuries which do not disable a workman for at least two weeks from earning full wages, and compensation can be refused for those caused by the workman's own misconduct. The first of these exemptions is the subject of great dissatisfaction on the part of workmen.

By the decision of the Courts in the case of Brintons *v.* Turvey in April, 1903, anthrax poisoning contracted in a factory is made an accident. The victim in the case was a woolsorter, and the disease was fatal. Compensation for disease caused by dangerous wool which a man is given to work upon seems only fair; but it may be very hard upon the employer too. The War Office insists on the use, for the manufacture of khaki cloth, of a particular self-coloured wool, which comes from anthrax-infected districts in Asia and is dangerous. A manufacturer may thus be forced to run some risk. Lead poisoning, on the other hand, has been decided not to be an accident. It is a chronic disease and the date of contraction cannot be fixed.

Employers may contract with their workmen to substitute for the provisions of the Act any other benefit or insurance scheme which is certified by the registrar of friendly societies to be not less favourable to the workmen than the Act. The use made of this provision is small and diminishing. During the five years ending 30th June, 1903, fifty-five schemes affecting 129,335 men had been certified, but at the end of the year, when most of the certificates expired, they fell to fifty. This is a pity; for such schemes, which are of a mutual character, provide

more pecuniary benefit to injured men than the law allows,[1] and possess other advantages. It is noteworthy that such schemes are opposed by some trade unionists on the ground "that the adoption of a schéme always creates a suspicion in the minds of a great many workmen that the firm must be using it for their own advantage".[2] Here we have an illustration of that baneful and invincible suspicion to which I have drawn attention.

Compensation payable under the Act is as follows:—

(*a*) In case of death:—

1. If the workman leaves dependants wholly dependent on his earnings the compensation is three years' wages with a minimum of £150 and a maximum of £300.
2. If he leaves dependants partly dependent the compensation is to be "reasonable and proportionate to the injury" sustained by them; the amount, which must not exceed that payable under (1) is to be agreed upon or failing agreement determined by arbitration.
3. If he leaves no dependants it is limited to defraying the cost of medical attendance and burial, up to £10.

(*b*) In case of total or partial incapacity for work, compensation is a weekly payment of not more than one-half the previous average weekly earnings, with a maximum of £1; payment continues during incapacity but only begins after the second week. After six months the weekly payment may be commuted to a lump sum, fixed by agreement or arbitration.

If these provisions are compared with the German ones they will be found less definite and less liberal. In the first place, the injured person receives nothing for the first two weeks; in the second, the maximum allowance for disablement is only half the earnings, whereas the German maximum is full earnings and the regular allowance for complete incapacity to work is two-thirds; in the third place an employer can compound in case of permanent

[1] According to the registrar of friendly societies the actual payments in thirty cases examined were 75 per cent. in excess of the maximum under the Act.

[2] *Report of Departmental Committee*, Cd. 2208, p. 104.

disablement instead of paying a pension for life; and, lastly, the lump sum provided in case of death may be less than the allowances under the German law, though in some cases it may also be more.

It is not possible to compare the pecuniary benefit received by the workmen because there are no returns for England.

The general working of the English Act, however, has been exhaustively examined by a departmental committee, and has been shown to be satisfactory on the whole though marred by a good many defects. The report of the committee[1] quite agrees, so far as factory workers are concerned, with the results of private inquiries made by myself among manufacturers and trade unions. The former invariably admitted that the compensation provided for by the Act was fair and just and not an excessive, though an appreciable, burden. In one large iron and steel works, I found that whereas the compensation previously paid under the Employers' Liability Act had only averaged about £75 a year, the annual amount now paid under the more recent Act was £3,700; and this may be taken as representative of works of the kind, in which accidents are frequent and severe. Employers complain rather of uncertainty with regard to their liability than of burden, and it appears that the liability tends constantly to increase. A large number of manufacturers insure against it either in Mutual Associations or in other insurance companies. I confess that I do not fully understand this proceeding. It may be wise for small employers who seldom have an accident at all but might be very heavily hit by a severe one; but in large works which have an ascertainable average of accidents year by year and can bear the cost of compensation without difficulty it seems more economical to settle their own claims and charge the amount to working expenses as a regular item. Insuring must be more costly because it involves contributing to the upkeep of the insurance association, if that is a mutual affair, and to its profits in addition if it is an ordinary trading concern. As a matter of fact, I found large works in which that view is taken. In one of these, where several thousand men are employed

[1] Blue-book, Cd. 2208.

on very heavy work in which serious accidents are constantly liable to occur, the compensation worked out at 8s. per £100 of wages, whereas the rates charged by the Employ rs' Liability Assurance Corporation in works of the same character are 20s. and 25s. per £100. The whole question of insurance, however, is in an unsatisfactory state and too intricate to be discussed here. I refer the reader to the report of the Departmental Committee.

Trade union officials, for their part, likewise admitted that the Act was very beneficial, but they complained of it in some respects. The three chief points of complaint are: (1) that payment does not begin until after the lapse of a fortnight after the injury; (2) that workmen whose capacity is impaired by age or physical defects are liable to be discharged because they increase the risk of accident; (3) that compensation for permanent disablement to young persons is unfairly assessed on their past earnings, and should have reference to prospective earnings. The Committee dealt at length with all these points. With regard to (1) they came to the conclusion that there were no sufficient reasons to justify them in recommending such a serious change as placing the burden of compensation for the first two weeks on employers. The chief reason against it is that it would encourage malingering. With regard to (2) and (3) the Committee recommended modifications of the law to meet the objections.

Other modifications have been recommended and the Act is in process of amendment, chiefly in the direction of clearer definition. It is outside the scope of my subject to enter into prospective details. The situation may be summed up by saying that the Workmen's Compensation Act has worked fairly well and proved a great boon to workmen without imposing an excessive burden on employers; but experience has revealed defects which it is proposed to modify. There is a clear tendency to proceed further in the direction of protecting workmen; it is not likely to take the form of the German State insurance, but it is very likely indeed to go on towards something like a substitute for that remarkable system. A noteworthy fact pointed out by the Committee is that the law works most smoothly and satisfactorily where the men are well organised.

In the United States the only protection afforded is practically that of the common law, as modified by special legislation in different States. The modifications are exceedingly various, but in general their intention is, like that of the English Employers' Liability Act of 1880, to remove some disabilities in the way of recovering damages for injury on the part of workmen. Thus in thirteen States the bar of "common employment" is abrogated in regard to certain industries and classes of injury. In twenty-eight States there is statutory liability for damages in cases of injury caused by failure of employers to comply with provisions of law intended to secure the safety of employees. In some States such liability applies to all industries, in others only to selected ones. An important modification of the common law, which has been almost universally adopted, gives the right of action for damages by surviving dependants in case of death. Contracting out and compulsion to join relief organisations are prohibited in some States; in others such organisations are encouraged. In short, the legal conditions in minor particulars vary to an endless extent in different States; but they only affect the rights of workmen to proceed against employers for damages under the common law. No indemnity is laid down save in one case in a single State. In Maryland provision has been made for a system of State insurance to cover the liability of employers, and it is laid down that the indemnity for death under this system is £200.

On the whole the position of workmen in regard to compensation for injuries is not yet so advanced in the United States as it was in England before the Workmen's Compensation Act. With the position in Germany there is no comparison at all. The practice of some employers in voluntarily paying compensation or in supporting relief insurance schemes does not affect the comparison, for such practices were quite as frequent in Germany and in England before legislation brought all employers under a common rule. The only measure of the protection enjoyed by labour in the mass is the law. Voluntary institutions may be and often are more advantageous where they exist; but they affect such a very small proportion of the industrial population—a few pin points in a fifty-acre field—that they hardly count in a general comparison.

CHAPTER X.

BENEVOLENT INSTITUTIONS.

THE concluding remarks at the end of the last chapter relating to private compensation funds apply generally to benevolent institutions maintained by employers for the benefit of their workpeople. Such institutions are very pleasant to contemplate; they attract much attention, being frequently described in newspapers and other periodical literature, and they do in fact make a great difference to the lives of those whom they affect. They appeal so strongly to sympathetic minds as to call up visions of universal peace and happiness in the industrial world. Some model settlement with its cottages, gardens, schools, play-grounds, hospital, stores, library, club, baths and other useful and pleasant things, is taken as a sample of what might be, and a Utopia is constructed from it. I have more than once in the previous chapters expressed the opinion that events are not moving in the direction of realising these aspirations. That does not arise from any hostility to them. On the contrary, I derive as much pleasure from contemplating model settlements as anyone else, and I believe there is a place for them; but I am convinced from a study of the facts that a general, or even a large extension of such things is a vain dream; and I am fortified in that opinion by the conclusions of two such experienced students of social questions as M. Yves Guyot[1] and Mr. Graham Brooks,[2] who approach the subject from diametrically opposite points of view and agree in very little else. I shall not follow them in denouncing paternal institutions as a folly or a fraud, but the fact that such a champion of Individualism as M. Guyot and such a sympathiser with

[1] *Les Conflits du Travail*, p. 5. [2] *The Social Unrest*, p. 203.

Socialism as Mr. Brooks should agree in denouncing them is strong evidence of wide-spread opposition. For my own part, I decline to subscribe to any "ism," for, sooner or later, it means prejudice and the attempt to make facts fit a theory. I neither admit any fundamental objection to paternal institutions nor expect to see their extinction. They do good work in their place and are better fitted for certain circumstances than any other "system". But, on the other hand, those who look for a "solution" of the "labour question," whatever that may mean, in this direction, deceive themselves. The whole tendency of the times is against it. The passing of industrial undertakings into the hands of corporations and companies, their great increase in size, the disappearance of personal relations, the growth of large urban communities, the organisation of labour, its growing power and independence, the recognition of the principle of equal representation in fixing industrial conditions, their regulation by law, universal education and the general democratisation of society—all these are fatal to the patriarchal order of things, to the idea of superior and inferior positions and to the conferring and receiving of "benefits". What labour demands in a modern community is not favours, but justice; not gifts, but a fair share of the takings, with the means and the opportunity to provide its own welfare institutions. In itself that is a sound, wholesome, and proper aspiration, inseparable, indeed, from the organic development of society. Nor is it one to which the benevolent can object, for benevolence includes justice and liberty. Those who "wish well" to others wish them at least these two. What the honestly benevolent employer really aims at is justice. In the older state of society it is attained in one way, in the newer in another. The conditions have changed; and if something is lost—the personal interest, the kindly family relations (where those existed)—something also is gained. Justice under the newer conditions will be far less dependent on individual good-will and far more generally diffused (for the personal interest, etc., have always been exceptional), and it will be free from any suggestion of condescension.

By benevolent institutions I do not mean conditions

within the factory conducive to the well-being and efficiency of the workers. I have already discussed them in Chapter VI. The modern tendency is all in the direction of providing such conditions, more as a matter of good policy than of philanthropy. They are generally appreciated and never resented, though sometimes regarded with indifference or ridicule. The opposition is directed against benefits which may be supposed to serve instead of better wages and to be intended to reconcile workers with their position, and it comes from organised labour, as might be expected. The advent of trade unionism in an industrial community undoubtedly causes a change of attitude towards such institutions, and it sometimes breaks up or disturbs harmonious relations. It is useless to bewail such occurrences, and sweeping denunciations are as much out of place on the one side as on the other. Organised labour is no more justified in denying good intentions to benevolent employers than are the latter in seeing nothing but wanton mischief in organisation. Motives are mixed on both sides. The employer's benevolence may be quite disinterested, and his intentions of the best, though sometimes they are not, and there is justification for the suspicion that showy appointments are intended to be a cover for low wages and cheap labour. On the other hand, the aspirations of labour to better its conditions and manage its own affairs are thoroughly justifiable; but organisers of labour, especially if they are fed on socialistic theories, do sometimes lose sight of the real welfare of their clients in pursuit of a visionary aim and wantonly destroy that which they cannot replace. However the responsibility be apportioned the two things do not agree, and since the organisation of labour is advancing benevolence is receding before it. Employers who have spent much time, thought, and money on welfare institutions, find their labours not only unappreciated but positively made the ground for greater hostility than is displayed against their neighbours who have never spent a shilling or a minute's thought upon the welfare of the persons they employ. Naturally men treated in this way lose all interest in the work, and though some may continue it for a time from a sense of duty the general tendency is to let it lapse.

Now the organisation of labour has been carried much further in England than elsewhere, and we should expect to find less paternalism in consequence. That is, in fact, the case. I do not think it wholly due to trade unionism, for although England or Britain led the way in model settlements, as in most industrial matters, the sense of duty towards the employed has never been so generally developed here as in Germany. If it had been, trade unionism would not have been forced into existence so early or would not have displayed such unquenchable vitality and such vigorous growth. That is to say, the absence of benevolence is cause as well as effect. The selfish greed of employers first drove labour to organise in self-defence, and the organisation thus stimulated has reacted on those employers who were not greedy. In Germany the same forces operate in the same way, but with different relative strength and consequently with different results. There has been more benevolence and less unionism, and consequently more benevolence remains, though it is declining as the other increases, imbued as it largely is with the bitter spirit of social democracy, which demands the total abolition of capital and hates the just employer more than the unjust, just as the extreme temperance reformer hates the moderate drinker far more than the drunkard, because the latter serves for a lever to the "cause" (not of temperance but of prohibition), while the former is an obstacle. The more general good-will of employers towards their employed in Germany has certainly retarded the development of trade unionism. I find welfare institutions much more common there than in England or America. They take many forms and I do not intend to attempt a comprehensive account of them, as their importance is diminishing. But I will give a sample, and I select for the purpose a very favourable specimen. It is too favourable to be regarded as an ordinary type, but at the same time it illustrates with great clearness the characteristic features of German welfare institutions in the industrial world.

The firm of D. Peters & Co., of Elberfeld, manufacturers of alpaca, worsted and silk goods, on becoming a limited liability company in 1896, determined to place its various benevolent institutions on a permanent footing by forming

a special company for their administration, entitled "Welfare Fund of D. Peters & Co. in Elberfeld and Neviges (Limited)," with a nominal capital of £1,000 in order to comply with the law. The concern is carried on by the co-operation of the firm, the general assembly of workers and officials and the council of elders. The general assembly meets annually in April, but extraordinary meetings may be called by the Welfare Fund or at the request of sixty male adult workmen. The business of the general assembly is to receive the annual report, elect the council of elders and to vote on resolutions, which may be proposed by the firm, the council of elders, or fifteen delegates. The council of elders is an interesting institution, not uncommon in Germany, but unknown, I believe, in England and America. It consists of one member of the firm, who acts as chairman, but has no vote, and eight ordinary members, half of whom are elected by the general assembly and half named by the firm. Only men over thirty years of age who have been ten years in the employment of the firm are eligible. The functions of the council are to examine the accounts, look after cases of need and misfortune, supervise the conduct of the younger workpeople, encourage them to self-improvement in their leisure time, combat rough behaviour and drunkenness, assist in securing the observance of the factory rules and in preventing waste. Further, as representatives of employer and employed, they have in consultation with the firm to settle the factory rules, the piece-work price-list, the hours of work, the means for preventing danger and increasing efficiency.

The object of the "Welfare Fund" is to administer the various institutions founded by the firm for the benefit of the workpeople. These are eleven in number:—

1. *Sick Fund.*—Originally founded by the firm in 1861, but since 1885 regulated by the general law of sick insurance. The object is to provide immediate relief in cases of sickness and death. The employers contribute one-third, the work-people two-thirds; the rate of contribution is 3½ per cent. of wages earned. The benefits are: Sick-pay for twenty-six weeks to the extent of half the average wage; medical attendance, drugs, spectacles, bandages, etc., and hospital free to members, medical attendance and hospital

free to their families, drugs, etc., half-price; 30s. for confinements; £4 10s. on the death of a member, £2 5s. on the death of a member's wife. These benefits go beyond the requirements of the law. Such sick funds are universal, but not necessarily administered in the same way.

2. *Compulsory Savings Bank.* — All the workpeople must belong. Married men contribute 5 per cent., and unmarried 10 per cent. of their wages, but the council of elders may reduce the latter to 5 per cent. Payments are made every pay day, except in the week before Easter and Whitsuntide, and the week before and after Christmas. Money can only be withdrawn with the consent of the council of elders, unless it is required for the purchase of a house or furnishing on marriage. Interest at 6 per cent. is paid on deposits up to £100; after that the depositor is free to dispose of his savings as he pleases. Persons leaving the employment receive their savings in full.

3. *Voluntary Savings Bank.* — This is for persons who wish to continue saving beyond £100, or to put by money for a short time. Interest at 5 per cent. is paid on deposits by workpeople, officials, pensioners and widows up to £300, and by girls who have left work up to £200. On further deposits interest is paid at 4 per cent. For current deposits at short notice 3 per cent. is paid. In the year 1900 the number of depositors was 771, and their savings amounted to £24,595. Of this sum £15,152 was held by 490 depositors in the compulsory bank, and £9,443 by 281 depositors in the voluntary bank.

4. *Assistance Fund.*—For cases of sickness and need which do not fall within the legal competence of the sick fund. It is administered by the council of elders, and is formed out of the factory fines, interest on the original capital of the Welfare Fund, the takings of the bathing establishment, and voluntary contributions by the firm.

5. *Pension Fund.*—Founded in 1868 to make provision for persons in the employ of the firm who had become unable to earn their living, and maintained entirely by the firm. When the general Infirmity Insurance Act was passed in 1889, the firm determined to continue their own fund in addition. The Act requires employers and employed to contribute to the State insurance in equal parts;

but the private pension fund had previously cost the firm twice as much as their statutory contribution under the Act. They resolved, therefore, to continue contributing to the private fund the same amount as to the State insurance, until the former reached £5,000, and from the interest thereof to supplement the State allowance to pensioners. In the spring of 1902 there were twenty-three pensioners, drawing £441 from the fund in addition to £204 from the State insurance. Fifteen out of the twenty-three had been in the service of the firm for an average of thirty-one years.

6. *House-purchase Fund.*—This is a special and noteworthy scheme. Its object is to help workmen to buy their own houses by instalments. The attempt was first made by giving the men a present of a month's pay; but this failed. In 1878 the plan was tried of building houses and assisting workmen to purchase by bonuses, so that in the course of seventeen years a man might become the freehold owner of his house without paying any more than he would have done for renting an inferior house. A single payment of 8 per cent. of the cost price was required, followed by annual instalments of 8 per cent.; and a bonus was added to each payment ranging from 15 to 25 per cent. according to the workman's length of service. Down to the end of 1900, thirty-six family houses had been bought by workmen and fifteen partly bought—in all fifty-one, representing a cost of £8,400. They are capital houses with gardens and close to the mill. A somewhat different system has been adopted for a number of more expensive houses built since 1900.

7. *Widows and Orphans Fund.*—Maintained by the firm and intended to fill a gap in cases where the death of the breadwinner deprives the family of the benefits of the assistance and pension funds.

8. *The "Welfare" Institute.*—This is a large building standing in its own ground, devoted to the use and enjoyment of the workpeople. It was opened in 1883 to celebrate the fiftieth anniversary of the firm's foundation. It contains a large hall for festive gatherings, weddings, concerts, and so on; a smaller hall used for the weekly practices of the choral society; a large room used as a kindergarten for the workpeople's children and on two

evenings a week for a well-attended hand-work school; a similar room used as a carpenters' shop for boys of school age; a large kitchen used as a cooking school. Two courses of twenty-four weeks and two evenings a week are held in the year, and each class consists of eight girls.

9. *Bathing Establishment.*—Is next door to the mill. Shower baths are free; other baths cost 2½d. The proceeds go to the assistance fund. The baths are open to outsiders on payment.

10. *Steam Laundry.*—A complete and modern installation which does all the washing for the workpeople at an inclusive charge of 5s. a quarter for each household, large or small. This results in a dead loss, so washing is taken in from the public at ordinary rates to make good the deficit.

11. *Library.*—Founded in 1894, with 1,000 volumes of general and educational literature.

The aggregate sum standing in the various benefit funds at the end of 1900 was £41,110, and the total payments made out of them up to that date amounted to £110,648. The number of persons employed in the mill is about 500.

The man who has anything to urge against this institution must be very hard to please. It is a genuine instance of conscientious and sympathetic treatment of the employed by their employers, for the firm does not employ cheap labour or pay low wages. On the contrary, a much larger proportion of men to women is employed than in a corresponding Bradford mill and the wages paid are higher; they are higher also than in neighbouring mills having no such benefits. Further, the hours of work have been gradually reduced in recent years by the voluntary action of the firm without any reduction of wages.

The whole thing is typical of the best German qualities; it is thorough, well thought out, solid and sensible with a flavour of patriarchal virtue. It is paternal, no doubt, but paternal in the best sense. There are no fancy appointments, devised with an eye to the camera, no theoretical fads and no parade of benevolence. The management is mainly in the hands of the men themselves and their elected representatives, who also settle with the firm all the conditions of work by mutual agreement. Here is collective bargaining, freedom of contract, all that a trade union secures and a

great deal more. I do not wonder that kind souls, who are distressed by industrial strife, on seeing a case like this desire to see such conditions extended. There is no reason why they should not be in suitable circumstances; but an essential point is a certain degree of remoteness. Neviges is an outlying village, several miles from Elberfeld. It does not consist only of Messrs. Peters' mill; there are others, but not many, and the place is small. To be successful, and even to have a fair chance of surviving, an industrial settlement conducted on paternal or philanthropic lines must lie apart. That was the case with Saltaire when it stood for a model; since it became part of Bradford the philanthropic side of it, except that which consisted of permanent gifts, has lapsed or passed into the hands of the local authority. Such model settlements as there are still in England lie apart. Among them Cadbury's cocoa works at Bourneville and Lever's soap works at Port Sunlight have been made as familiar as the features and career of a popular actress by repeated description and illustration. But they produce articles of a fancy character, depending mainly on advertisement, and possessing no international industrial significance. The great manufacturing industries cannot be successfully planted anywhere at will; they flow to certain localities where the conditions are favourable and they tend to get massed together in large communities, where paternal institutions can hardly live. When the circumstances are most favourable, namely, in some settlement apart and self-contained, a certain amount of philanthropic effort is simply necessary for the conduct of the business. The persons employed must live, and housing and other accessories must be provided for them. That is the first step. Then schools follow, churches, clubs, libraries, stores and so on. I have mentioned some prominent instances in my descriptive chapters. Krupp's, the largest and most famous, began in this way from the sheer necessity of housing the workmen as they increased with the rapid growth of business. Saltaire is another famous instance, and both of these are particularly instructive because they illustrate the adverse tendency of the times to such institutions. As Saltaire has become part of Bradford, so Essen has grown into a big town, which refused to return the late

owner to the Reichstag and is falling more and more under the sway of social democracy. The institutions go on, but they are the object of bitter attacks and the life has gone out of them. A third case described is that of the cotton town of Pelzer, in South Carolina, and it illustrates the opposite conditions proper to success. The little town stands alone in the heart of the country; every foot is owned by the manufacturing company which has made it, and runs it as a town. Houses, schools, churches, hotel, library, institute, water supply, bicycle track, gardens, cow pastures —all are provided and owned by the company. It has also a savings bank, but does not run the stores. The mill hands have one of their own, which is managed by themselves.

Pelzer is a good example of the judiciously paternal in the American style. It is on a much larger scale than the Peters establishment at Neviges, and the natural conditions are different; but the comparison illustrates some characteristic points of distinction between German and American methods. The elaborate economic provisions of the former, designed to promote thrift and safeguard the welfare of those concerned in all contingencies, are absent from the latter, which leave the people very much to themselves in regard to such matters while yet retaining far more absolute power over them.

There are several other settlements somewhat similar to Pelzer in the United States; and some of them are of a much more ornate character. Among them Hopedale and Ludlow in Massachusetts are probably the best known. The former is the seat of the Draper textile machinery works, one of the most famous concerns of its kind in America. The company has built a number of houses, a church, library, school and town hall, but it does not own the village. Similarly at Ludlow, a mill village where hemp and jute are manufactured, the owners have built most of the houses, a church, school, library and so on, and have established a savings bank and other institutions for recreation and self-improvement. The observations of Mr. Hubbard, the treasurer of the company, are so apposite that I take the liberty of reproducing them:—

To those who read accounts of social betterment it may seem a most simple and easy matter to create a model community. Build attractive houses, establish an institute with a trained social secretary, and they think the rest will follow. How little they realise how much time, work, tact, patience, perseverance and charity will be required to bring about the desired result. They will encounter racial prejudices, local and personal jealousies. They will have to repress the inefficient would-be leaders and to draw out the efficient but reluctant ones. We often read glowing accounts of social betterment carried on by such and such a concern; shortly afterwards of the establishment being the centre of a disastrous strike; later, possibly, that the whole attempt at social betterment has been given up as a failure. Then it is safe to say that it was not conceived in the right spirit nor carried on in the right spirit; that it was either dictated by self-interest or executed in a spirit of condescending patronage. Social betterment, to be successful, must first be free of any suspicion that it is designed to take the place of wages; second, that it must not be too paternal, or suggest that the recipient of its benefits does not know how to obtain them himself; third, the ideals aimed at must not be too far removed from actual conditions; fourth, as far as possible and continually more and more, the people should assume the management.

It may be stated generally that experiments in social betterment have been judged too hastily to have been successes, or to have been much greater successes than they really were. Many have been failures. Of these we rarely hear.[1]

With almost the whole of this I heartily agree. Mr. Hubbard states the conditions of success and the cause of many failures in terms which cannot be improved; but when he says it is safe to assume that the spirit or method is at fault in all cases of failure he is speaking too positively. There is a real antagonism between the principle of trade unionism and that of employers' benevolence. And more than that, labour legislation, which is to a large extent the expression of labour organisation, tends to stifle benevolence. The voluntary does not thrive in the presence of the compulsory. The comparatively backward state of labour legislation in the United States means more room as well as more need for employers' benevolence to take its place.

Both legislation and organisation are advancing forces, and as they advance private action recedes before them, and to them a third must be added in municipal activity which more and more takes upon itself and out of the hands of employers the well-being of the people. But in any case benevolent institutions affect such a minute proportion of the industrial population that they do not form an appreciable item in an international comparison.

[1] *Bulletin of the Bureau of Labour*, Washington, No. 54, p. 1213.

CHAPTER XI

HOUSING.

HOUSING is unquestionably the most important of all home conditions, and it is naturally one to which increasing attention is directed in all western countries. This is due to two causes: (1) the growing knowledge of sanitation and recognition of its influence on health; (2) what I call the progressive urbanisation of the people, which accompanies the development of industrial activity. The two go together, of course, and react on each other, but each has a special bearing on the two main problems connected with housing; sanitary demands make the question of quality, urbanisation makes that of quantity, acute. It is as well to bear the distinction in mind, because though both problems are present in some degree in all large communities and are generally mixed up together, their relative importance differs greatly in different countries and different districts. That is found to be the case when we come to compare England, Germany, and America.

A great deal of detailed information on the subject has been given in the descriptive chapters, but it is scattered about under the headings of the towns or districts described, and I cannot expect any reader to draw from it any definite conclusion such as is present in my own mind. The subject requires more comprehensive and systematic treatment, and I will therefore take the more important points seriatim.

Rent.—Numerical statements of rent are subject to the same kind of difficulty, though in a lesser degree, as similar statements of wages; that is to say, the amounts vary within wide limits not only in different places but in different parts of the same place according to the situation and character

of the houses. The reduction to an average, therefore, is open to the same objection as in the case of wages; it can only represent the truth approximately, and any such statement must be read with a large margin on both sides. Subject to this reservation I give the average weekly rent for an unfurnished room as obtained by inquiries on the spot in a number of industrial centres as nearly as possible of the same character:—

Average Weekly Rent per Room.

England.	Germany.	America.
s. d.	s. d.	s. d.
1 3	2 0	2 6

In this computation I have not included the capitals, where rent is higher than almost anywhere else, but have followed the plan adopted throughout and have taken the most purely industrial provincial towns, where the conditions are most strictly comparable. It is necessary to bear the explanation in mind, because the subject of housing is most often discussed in relation to the capitals, which are not only most prominent in themselves, but also present the problem in its most acute form. This is one of the respects in which they are not representative, and one of the principal reasons why they are excluded from my survey. People are very apt to generalise from the capital, as I have previously pointed out, but in relation to housing it is particularly fallacious. The fallacy is greatest in the case of London and least in that of Berlin, which is more typical of modern urban Germany in regard to housing than in any other single respect. If, therefore, any students of the subject, particularly in England, are surprised at the lowness of the figures given, I trust they will remember to what it applies.

I have, in fact, put the figure for England a little higher than I might have done, in order to be on the safe side; and the only official information I have been able to discover bears me out. It is contained in the Second Series of Memoranda, etc., prepared by the Board of Trade (1904). There the average annual rental of the working-class houses in typical working-class streets in twenty provincial towns is given as £12 4s. in 1900. If we assume, as we may

pretty safely do, that such houses are, on the average, four-roomed houses, the mean weekly rent per room works out at 1s. 2d., which is exactly what my own inquiries made it.

The same Blue-book gives a good deal more information about rent in England, but, unfortunately, the unit taken is the house, which is a too elastic term. It renders the figures as they stand quite useless for purposes of international comparison, because, as we shall presently see, a "house" or "dwelling" means very different things in different countries. The unit of comparison must be the room; and, since rent in England is always reckoned by the week for working-class houses, I have reduced it to the same scale in all cases. In Germany it is generally reckoned by the year, in America by the month. For Germany I have no official information except that in Berlin, the average weekly rent of a room, as ascertained by a recent investigation of 908 households, is 4s.[1] This may be compared with London. According to returns furnished by the Charity Organisation Society, and quoted in the Board of Trade Blue-book,[2] the average weekly rent in 1899 was, for a single room 3s. 5½d., for two rooms 5s. 8d. and for three rooms 7s. 2d., which gives an average of 2s. 8½d.; the average weekly rent per room in County Council, municipal and trust tenements was 2s. 3d. These figures show roughly that the higher level of rent in Germany holds good of the capital also. The figure I have stated—namely, 2s.—for industrial centres corresponds with those given in Harnisch's *Jahrbuch*, but, as that statistical annual only refers to the Rhineland province, where housing is particularly dear, it may be too high for the country as a whole. In Chemnitz I found the average weekly rent of a room was about 1s. 6d., although the "house famine" is very acute there; and outside the town, where many workmen live, it is considerably less.

With regard to the United States a great deal of information on the subject has recently been compiled.[3] If official investigations on the same scale had been carried out in other countries it would be possible to make statis-

[1] *Reichs-Arbeitsblatt*, March, 1905. [2] Cd. 1761.
[3] *Eighteenth Annual Report of the Commissioner of Labour*, 1903.

tical comparisons with far more confidence than is justified at present. These remarkable returns cover 25,440 families, representing 124,108 persons in thirty-three States, and they give in great detail the occupations, family conditions, earnings, expenditure and other particulars. I here merely extract some of the information relating to rent. The States contributing the largest number of families to the inquiry are, in the following order: New York, Pennsylvania, Massachusetts, Ohio and Illinois, which are all great manufacturing States. The average weekly rent of a room in these States works out as follows, omitting small fractions: New York, 2s. 1d.; Pennsylvania, 1s. 10d.; Massachusetts, 2s.; Ohio, 2s. 1d.; Illinois, 1s. 9d. The mean is a fraction under 2s., and the mean for the United States is somewhat less, namely, 1s. 10½d. This is very appreciably lower than my estimate of 2s. 6d., given above, and I do not question its accuracy for a moment. It does not upset my estimate, but so far as the two are parallel rather confirms it. They are derived from different fields of inquiry. Mine is confined to a limited number, about a dozen, of the leading centres of particular industries, presenting conditions most comparable with the corresponding centres in England and Germany. The official inquiry relates to a very much larger number of places, including comparatively small ones, and it does not embody the mean of each locality, but the mean of all the families derived from the aggregate of localities. The places are not named, so that I am unable to check my results by a nearer comparison. I have no doubt that the official figures are much more representative of the United States as a whole than mine, and if corresponding information were available for the other countries a more satisfactory comparison could be made; but they are not, and I must compare like with like. If the same basis were taken for the other countries I have no doubt at all that the result would be correspondingly lower. The average figure for England would not be more than 1s.[1] and for Germany 1s. 6d. It may, I conclude, be taken as a rough general rule that rent in America is about twice as

[1] This is the actual average for houses let by Co-operative Societies in twelve provincial towns (Blue-book, Cd. 1761).

high as in England,[1] and that Germany comes between, but rather nearer the American than the English level; and in England the rent includes local taxes, or rates, which is not the case in Germany or America.

In all three countries rent has been rising of late years, but the only comprehensive information I have been able to obtain is that contained in the Board of Trade Blue-book previously mentioned. The following index numbers for the course of working-class rents in large towns in Great Britain are given :—

Relative Working-class Rents.

1880	86·6
1885	90·1
1890	89·9
1895	96·3
1900	100·0

The chief reasons for the rise of rents in England are the increase of wages in the building trades and the increase of local rates. Both in Germany and America the rise has been more rapid, so far as I can ascertain, no doubt on account of the more rapid growth of the urban populations and the consequent demand for accommodation.

Density.—The next point of importance is the distribution of the people in the houses and the "density" of population. Density may be measured in three ways. The usual way is to take an area and divide the population by the surface; if you are dealing with a large area the result is stated as so many persons to the square mile or equivalent measure; if with a smaller one as so many persons to the acre or hectare. There is a certain value in these statistics, but they obviously bear no necessary relation to the housing; in one place the people might be massed together in a small space and densely crowded under roofs, while a large area of unoccupied ground outside would bring down the nominal "density" to a very low point; in another place the opposite conditions might occur. The next way is to divide the population by the number of "houses," which gives a much more valid measure of the

[1] This estimate is substantially in agreement with the conclusions of the majority of the English trade unionists who formed the "Moseley Commission" in 1902.

living density. The third way is to divide the population by the number of rooms. A combination of the last two, the one giving the superficial the other cubic living density, would throw most light on the housing, but unfortunately no comprehensive *data* are available with regard to the number of rooms. We must do the best we can with the number of houses, aided by such other information as can be gained in one quarter or another.

Average Number of Persons to a House.[1]

England (1901).	Germany (1900).	U.S.A. (1900).
5·2	8·9	5·3

It is at once clear even from these summary figures that the house density is much the greatest in Germany and the least in England; but of course such a general comparison does not represent the relative conditions of urban life in the three countries. Urban density is always greater than rural, and since the rural population is a very much smaller proportion of the whole in England than in Germany or America it is evident that the disparity in urban density must be considerably greater than that shown above. The inference is confirmed when we take smaller units of comparison. Let us first compare some industrial areas.

Average Number of Persons to an Inhabited House.

ENGLAND.

Lancashire	4·9
Yorkshire (W. Riding)	4·5
Staffordshire	4·9

GERMANY.

Saxony	11·69
Rhineland	8·52
Brandenburg (without Berlin)	10·88

U.S.A.

Massachusetts	6·3
Pennsylvania	5·5
Rhode Island	6·7

[1] The terms used are "inhabited house" in the English census, "inhabited building" in the German, and "dwelling" in the American.

Here the relative positions are much more clearly marked; but a comparison of towns makes the point still plainer. I give ten large towns, partly commercial and partly industrial, including the capitals:—

AVERAGE NUMBER OF PERSONS TO A HOUSE.

England.		Germany.		U.S.A.	
London	7·9	Berlin	46·6	New York	13·7
Manchester	4·9	Breslau	39·1	Chicago	8·8
Birmingham	4·8	Leipzig	27·0	Philadelphia	5·4
Leeds	4·5	Dresden	27·5	Boston	8·4
Sheffield	4·8	Hanover	20·1	Pittsburg	6·3
Bradford	4·3	Düsseldorf	19·4	Providence	7·0
Bolton	4·6	Chemnitz	29·1	Fall River	11·0
Oldham	4·5	Elberfeld	18·7	Lowell	6·9
Halifax	4·2	Barmen	18·0	Lawrence	7·7
Wolverhampton	4·8	Essen	18·6	New Bedford	7·1
Mean	4·9	Mean	26·5	Mean	8·2

It will be seen that the capital occupies an exceptional position in each country; London is 61 per cent. above the English mean, Berlin 76 per cent. above the German, and New York 67 per cent. above the American. These figures afford numerical proof of my contention that the conditions of life in the capitals are not typical of a country. Yet the house-density in London, relatively high as it is to that of the provincial English towns, is appreciably less than the American mean and less than one-third of the German. The table is an eloquent statement of the most salient difference between the conditions of urban housing in the three countries. It means in practice that in England the industrial classes live in small separate houses or cottages, in Germany they live in barracks, and in America in larger houses which are shared by more than one family. That is the broad fact: the statistical evidence fully corroborates the observations I have previously made on the point in the descriptive chapters.[1] In the whole list only one American city approaches the English standard, and that is

[1] See pp. 208, 211.

Philadelphia; I have already pointed out its exceptional character.[1]

I regard this fact as of cardinal importance in the life of the people, and will pursue the evidence a little further. It may be objected that the lists are selected. Every list is selected, but these are not selected for the purpose. They include the most important of the representative industrial towns embraced in my survey, together with the capitals and some others of mixed character, as fairly comparable as possible. A different selection would, in my opinion, be less representative, but in order to put the matter quite fairly I will mention some exceptions and modifications.

In England the towns on the Tyne form an exception; at Newcastle, Gateshead and Shields the average number of persons to a house is a shade over eight, but the conditions here are quite unusual. On the Tyne rents are exceedingly high, much higher than anywhere else out of London, and it is the custom for families to share a two-storied house, one on the ground, the other on the upper floor. There are also some tall, old buildings let as tenements. On the other hand, in the great majority of English industrial towns the house density is lower than the mean given above.

In Germany some towns of importance have a lower rate than those on the list. For instance, the number of persons to a house in Cologne is 15·5; in Frankfort-on-Maine, 17·5, in Aachen, 17·3; and in some of the smaller Saxon manufacturing towns it is still less, as in Glauchau, 11·3; Meerane, 10·4; Zittau, 13·7. On the other hand, most of the remaining great towns, such as Magdeburg, Stettin, Konigsberg and Posen much exceed the average given above, and in Charlottenburg the density is even greater than in Berlin.

With regard to the United States it is necessary to discriminate. There are many towns of small and medium size with a house density very much the same as the English standard, and some of these, such as Dayton and Springfield in Ohio, are manufacturing towns. Generally speaking the type in the south and west, and to a certain extent in the

[1] See p. 251.

central States, is different from that indicated above ; and if we take the great towns in all the States and compare them with all the great towns in England we get a different result. There are in the United States sixteen, and in England fourteen towns with upwards of 200,000 inhabitants ; the average number of persons to a house is 7·2 in the former and 5·3 in the latter. The discrepancy is here considerably less than in the table given above. If other units of comparison are taken the results differ again, some showing greater and some less discrepancy. But in all cases the English density remains below the American, and there is not throughout the States a single town of 25,000 inhabitants with so low a density as the large manufacturing towns of Halifax, Huddersfield and Rochdale in England. However the facts be examined, the conclusion emerges that housing is more spread out in England ; and the more strictly the comparison is confined to important industrial centres the greater the discrepancy. If the reader is not tired of statistics I will refer to one more table in the United States Census, which puts the facts in a different and, perhaps, more instructive way.[1] It classifies the dwellings according to the number of families living in them, and gives the proportion of families living in each class, namely, dwellings with one, with two and with three or more families. I extract from this table the following particulars for the towns having over 100,000 inhabitants in the Eastern and Central States, which are the great industrial States :—

[1] *Twelfth Census*, U.S.A., vol ii., table xcviii.

House Density in American Industrial Cities.

City.	Percentage of Families in Dwellings having more than One Family.	
	Two Families.	Three Families and over.
New York (New York)	11·5	71·0
Chicago (Illinois)	28·6	42·4
Philadelphia (Pennsylvania)	9·6	5·9
St. Louis (Missouri)	40·3	18·3
Boston (Massachusetts)	26·5	41·3
Baltimore (Maryland)	20·0	7·4
Cleveland (Ohio)	25·1	13·1
Buffalo (New York)	29·1	23·9
Cincinnati (Ohio)	23·0	44·1
Pittsburg (Pennsylvania)	24·6	11·0
Newark (New Jersey)	29·4	40·4
Jersey City (New Jersey)	21·4	46·8
Providence (Rhode Island)	43·9	19·1
Rochester (New York)	15·6	8·3
Toledo (Ohio)	10·2	3·8
Allegheny (Pennsylvania)	31·5	11·0
Columbus (Ohio)	11·9	8·0
Worcester (Massachusetts)	28·5	46·2
Syracuse (New York)	32·9	10·9
New Haven (Connecticut)	38·6	21·7
Paterson (New Jersey)	46·5	26·4
Fall River Massachusetts	29·0	54·4

In these twenty-two great towns the proportion of families living two or more together in a dwelling ranges from 14 to 83·4 per cent. The two showing the greatest house density are New York and Fall River, the two showing the least are Toledo[1] and Philadelphia; in the former more than four-fifths, in the latter about one-seventh of the families live more than two together in a dwelling. Out of the whole number, thirteen have more than half their families so living.

It must further be remembered, in comparing the United States with England or with Germany in this respect, that the proportion of population living in large public institutions such as barracks and work-houses, which

[1] Toledo is distinguished by having the largest proportion of houses owned by their occupiers of all the large towns, namely 46·0 per cent.

count as houses and so tend to increase the statistical house density is much greater in the two latter.

I believe that the evidence here adduced fairly represents the broad differences between the three countries in this important matter; but the impression made by observing those differences in actual life cannot be conveyed by any figures.

Overcrowding.—The house density, however important as it is, does not necessarily furnish a measure of the space accommodation, for houses may be large or small and the term by itself tells nothing. What is called "overcrowding" is usually measured by the number of persons to a room; and the official standard adopted in England is two persons; more than two to a room is called overcrowding. Of course the size of rooms varies and the measure is rough, but it is more exact than that of houses. Only the English census gives statistics concerning the number of persons to a room so far as I can ascertain, but some official information for the United States also is available. I have not been able to find corresponding information for Germany, although the question is much more acute there.

In England the proportion of the population living in overcrowded conditions, as defined, was 8·2 in 1901. In the rural districts the figure fell to 5·8, in the urban it rose to 8·9. Turning to the towns we find the greatest amount of overcrowding on the Tyne, where the proportional figure reached 34·5 (Gateshead); and the least at Northampton, where it was less than 1 per cent.; in London as a whole it was 16·0, but in the most crowded district (Finsbury) it reached 35·2; in the Lancashire towns the highest was 13·3 at Wigan and the lowest 2·6 at Preston; nearly all the manufacturing towns in this county were well below the urban mean mentioned above (8·9); the Yorkshire towns were above it, ranging from 9·5 at Sheffield to 14·6 at Bradford. In other large towns we have the following: Birmingham, 10·3; Nottingham, 3·6; Leicester, 1·0; Bristol, 3·5; Hull, 6·1; Portsmouth, 1·1; Wolverhampton, 4·6.

It cannot be said that a review of these facts bears out the prevailing impression that a very large proportion of the industrial population in England lives in a condition of overcrowding. And if we examine the movement in regard to housing, it appears that in spite of the growth of popula-

tion in the towns the density is diminishing. The number of persons to a house fell from 5·32 to 5·20 between 1891 and 1901, and the proportion of overcrowding in the houses from 11·2 to 8·2. The census remarks: "However the tenement figures for England and Wales are compared it is impossible to avoid the conclusion that the comparison affords satisfactory evidence of distinct improvement in the housing of the people during the ten years 1891-1901". In short, outside of London and a few other special localities the problem of *quantity* is not acute, and in most of the provincial towns it does not exist at all; the supply is nearly adequate and becoming more so. And even in London the acute difficulty is confined to the inner area; outside, in Greater London, the working classes are housed in separate cottages as elsewhere, and the supply keeps pace fairly with the demand. I have watched during the last fifteen years the erection of many hundreds of miles of streets, consisting entirely of such houses, on the northern and eastern fringes. We have nothing to compare with the "house-famine" which prevails in Germany; and the comparatively low rents in England are one result of this comparatively abundant supply.

The official information available for the United States is contained in the eighteenth annual report of the Commissioner of Labour (1903), which consists of the special inquiry into 25,440 families, to which I have already referred. The average number of rooms per family and per individual is given for 23,447 families distributed in thirty-three States. The summary results are as follows:—

States.	Average Size of Family.	Number of Rooms.	
		Per Family.	Per Individual.
North Atlantic States	4·68	5·21	1·11
South Atlantic States	4·96	4·81	·97
North Central States	4·86	4·74	·98
South Central States	5·09	3·80	·75
Western States	4·06	4·70	1·16
United States	4·75	4·95	1·04

In the separate States the number of rooms per individual ranges from ·63 in Tennessee (rented house) to 1·68 in New Hampshire (owned house). The number of rooms is generally a little higher in owned than in rented houses, which are distinguished in the returns, and it is a shade higher for the native than for the foreign families, namely 1·08 against 1·00.

Of course these figures prove nothing about over-crowding at large. The inquiry may not have touched the lowest strata of the population at all, and it is probable that it did not, for the enumerators would not go to the lowest strata to fill up their schedules which were of a very elaborate character. Moreover, a good average may conceal some bad single localities. But they do prove that in the large number of families covered by the inquiry there could have been very little over-crowding and that on the whole there was a strikingly liberal allowance of room space. And in my opinion they go far to prove that the room density of the decent industrial population is decidedly less in the United States than in England. No exact comparison can be made, but the following facts give some indications. The average number of rooms to a family in those industrial States which contributed most schedules to the inquiry was: New York, 4·83; Pennsylvania, 5·35; Massachusetts, 5·51; Ohio, 4·21; Illinois, 4·91. In 1901 the proportion of houses in England consisting of four rooms and upwards was 75·9 per cent., and of five rooms and upwards 53·2 per cent. of the total, and the proportion of the population so housed was 82 and 60·1 per cent., but I doubt if an examination of average working-class houses in any district would show so high a number of rooms to a family as in Massachusetts and Pennsylvania. I draw the conclusion, which agrees with my own observation, that working-class houses of five and six rooms are commoner in America than in England, where the four-roomed house is the rule, though newer ones are generally larger.

The information about overcrowding which I have for Germany is scrappy but striking.

In Berlin the special investigation of 908 households, to which I have previously referred, gave the following remarkable results:—[1]

[1] *Reichs-Arbeitsblatt*, March, 1905.

Households.	Persons.	Rooms.	Rooms to a Dwelling.	Persons to a Room.
908	3,828	1,261	1·4	3·03

The overcrowding here shown can only be called gross, and the more so because the households do not appear to belong to the lowest grades of society. The occupations of the heads were very varied but the great majority belonged to the artisan class, the incomes ranging from £35 to £40 (only two single households) up to £150 (one household of thirteen persons). The incomes of 599, or roughly two-thirds, ranged from £65 to £100. The average weekly rent per room was 4s., which was nearly 3d. less than the average asked for empty rooms in Berlin at the beginning of 1904.

But, as I have repeatedly pointed out, Berlin is an exception. A more representative case is Barmen, for which I have a little information; its place in the table given above shows that the house density is less than in most of the large towns, and therefore it is a fair case to take.

In Barmen the police made an examination of 100 houses inhabited by the labouring class in the year 1897; they contained 2,106 rooms and attics and were inhabited by 882 families numbering 4,787 persons. The average was twenty-one rooms, inhabited by nine families of forty-eight persons, to each house; and the average number of persons to a room was 2·25. Taking the English standard of overcrowding (more than two persons to a room) I find that the proportion of the tenants of the model dwellings, built by the Barmen Building Company, so living in 1897 was 16·01 per cent.

The Krupp houses at Essen are a good specimen of superior German housing and they are on a large scale. I have already given a full account of them and only mention them here for the light they throw on overcrowding. I find that the number of persons living in them in May, 1900, was 26,678. The number of dwellings was 4,274, including the pensioners' colony, and the number of rooms 11,435 or a few more.[1] The average number of persons to

[1] Eighty-four of the houses have seven rooms "and over," so that a little margin must be allowed.

a room is 2·1. As a good many of the houses are occupied by superior officials the average of the workmen's dwellings is probably a little higher. It must, however, be remembered that the birth-rate is very high in Essen and the families very large. This factor holds good in general of Germany as compared with England and America and it ought not to be forgotten. It is easy to avoid overcrowding when people avoid having any children, and as a matter of fact the diminished birth-rate is largely responsible for diminished overcrowding in England and America.

I have a little more information, of a less official character, for Düsseldorf, a town which has been very hard pressed by the urban inrush. At the same time it throws light on the question of rent and some other points, so that I will give it rather more fully. It is derived from a special inquiry conducted on behalf of the Provident Building Society (*Spar-und-Bau Verein*) in 1900. It appears to have been instigated by the fact that in the previous winters the town authorities were compelled to find shelter for a number of homeless families, the heads of which were not out of work or very poor, or unable to pay rent, but simply homeless, largely because they had children; for in Germany, as elsewhere, one result of the excessive demand for housing is that people refuse to let their rooms to tenants with large families. The inquiry was conducted by the local trades' council or association of trade unions, which sent out a question form to be filled in by the workmen with particulars as to occupation, earnings, number and age of children, rent paid, number of rooms, etc. An important feature of the inquiry is that it relates, not to the lowest class of the population, but to married workmen of all kinds in fair employment. Particulars were obtained of 194 families. Their average earnings were 4s. a day; 111 lived in two rooms, 68 in three rooms, 11 in four, three in five, and one in six rooms. The four-, five-, and six-roomed families, however, either lived in old farmhouses on the edge of the town or took in lodgers. The inference is drawn that 60 per cent. of the fairly-paid class of workmen in Düsseldorf live with their families in two-roomed tenements. The average rent paid for this accommodation was 3s. 8d. a week; but it is remarked that all

the dwellings at this rent or below it, except those erected by a charitable trust or by factory owners, are on the extreme outskirts of the town, and that the cheapest, which bring down the average, are attics, or "little boxes in old farm-houses". The better dwellings were rented at 4s. a week and upwards for the two rooms, and the highest were 5s. 4d. a week. One man, a smith, earning 1,050 marks in the year, had to pay 280 for rent, leaving 14s. 9d. a week to live on; he had two children, aged nine and eleven. That makes 37 pfennigs a day per head; the prison scale is 80 pfennigs. The children in these two-roomed dwellings were of all ages from infancy to twenty-one, and the number in each family ranged from one to six; but for the most part workmen in good employment with more than three children make shift to get three rooms, and, of course, pay a higher rent. One case on the list was that of a day labourer with nine children who had 10s. 8d. a week to live on after paying his rent. The houses are all of the tenement class; the average number of families to a house was 8·14, and the average number of persons 40. Remarks appended by the workmen go to show that even the dwellings for which the rent is over 2s. a week per room are often very defective and insanitary, and cases are given of the constant and rapid rise of rents. One man who paid 27s. 6d. a month for three rooms had his rent raised thrice in the course of the year, until it stood at 40s., or 8s. 11d. a week. This represents 3s. a week per room in a tenement building.

Experience has taught me to regard "shocking revelations" with profound distrust, and of course a report of this kind, which has a distinct object in view, is not intended to make the best of things; but it is quite in keeping with other information and with the results of personal observation, and I believe it substantially represents the truth.

The facts with regard to overcrowding revealed in the report are as follows: In the two- and three-roomed dwellings there were 179 families consisting of 789 persons, and they lived in 426 rooms. The average was 1·8 persons to a room, and the actual proportion of persons living more than two in a room was 41·3 per cent.

In the working-class tenements built by the town the

average number of persons to a room was 1·3 and the average weekly rent 2s. 3d. per room.

These scattered details afford a certain insight into the worst feature of German housing, which is the worst feature of German industrial life. They show a very great inferiority to England and America in regard to the quantity of accommodation. In Germany there is a real "house-famine," as it is commonly called; in England and America there is not, save in some specially congested localities, which are more numerous in the latter than in the former. One of the principal causes of the difference is the more recent and more rapid change in the character of the population.

To judge from villages, small old-fashioned towns, and the older parts of modern cities, a considerable part, at least, of the industrial population used formerly to be housed in single dwellings, as in England. The general and ever-increasing extension of tenement or barrack housing has arisen from the demand for urban accommodation which has accompanied the industrial expansion of the last thirty years. The beginnings of that need, which has developed into the house famine of to-day, go back somewhat earlier. Alfred Krupp found himself obliged to provide housing for his workmen in 1863; a building company was started in Bonn in 1864; one in M. Gladbach, of which some account has been given, in 1868, and one in Barmen in 1872. But these earlier efforts in the Rhine province were isolated; the pressure was not generally felt until later, and it increased gradually as the towns drew the people in from the country. It is during the last ten or twelve years that the trouble has become really acute. The remarkable period of prosperity which culminated in 1900 caused a great demand for labour; and a stream of foreign immigrants, including Poles and Italians, flowed into the industrial centres. Their presence is attested by the fact that it has been found necessary in some of the Rhine towns to put up public notices in those languages. At the same time, the native rural population was steadily moving townwards, and emigration over seas dropped down to insignificant proportions. It is not generally realised that in recent years Germans have almost ceased to emigrate; the number leaving the

country dropped from 220,902, or 48·6 per 10,000 of the population, in 1882 to 20,874, or 3·7 per 10,000 of the population, in 1901. During the recent depression it only rose again to 6·0 per 10,000 in 1903. The shifting of the industrial balance is indicated by the following figures from the last two occupational censuses :—

Year.	Agricultural Population.	Industrial Population.
1882	18,840,818	16,058,080
1895	18,501,307	20,253,241

The "rural exodus" between 1895 and 1900 is further shown by the fact that the population of East Prussia actually diminished in that period, and the increase in Pomerania and Posen was only 3·9 and 3·2 per cent., whereas in the industrial regions of Westphalia, Rhineland and Saxony it was 18·0, 12·8, and 10·9 respectively.

A statistical comparison of the "urban" and "rural" populations and of their changing relations in the three countries is not satisfactory because the bases of computation are different; but some light on the comparative rapidity of the movement is thrown by the statistics of the great towns having over 100,000 inhabitants and their relation to the rest of the country.

Percentage of Population in Great Towns.

England.		Germany.		U.S.A.	
1881.	1901.	1880.	1900.	1880.	1900.
31·6	35·0	7·2	16·2	14·6	18·8

Although the proportion of the population massed in these great aggregations is less in Germany than in America and much less than in England, the pace at which they have absorbed the population and their relative increase since 1880 has been enormously greater in Germany than in either; and the fact indicates a much more rapid process of

urbanisation, which goes far to explain the greater acuteness of the housing problem. In England, of course, the thing has been going on for a very long time, and the conditions have become better adjusted to the need: and the same holds good in a less degree of the industrial districts in America. In Germany the change has been more sudden. Indeed, the actual rate of increase has been only very little less in the German than in the American great towns; they have grown nearly 230 per cent. since 1871.

The state of things described above obviously provides the Social Democrats with a powerful lever for pushing their views, because the private ownership of land is one of the causes of costly building; and the great increase of their polls in the Ruhr district in particular coincides with the growing house famine in the iron and coal towns of that region. But private ownership is not the only cause, if indeed it is a cause at all; otherwise housing would be equally dear in English manufacturing towns. I have been informed by a good authority that the system of tenure is largely responsible for the difference. In Germany conveyancing is the simplest matter; the two contracting parties go before the local official, pay a small fee, and the thing is done. Consequently people will not take land on a lease for buildings; they buy outright, which entails a heavy initial outlay, though it may be good economy in the end. Then the cost of materials appears to be very high; it has risen of late years, as that of labour has risen; these two account for a large part of the increased cost of building, and to them must be added the requirements of modern administrations under the law. You cannot have bye-laws and inspectors without paying for them. These we have, too, in England, and they are partly responsible for the rising cost of housing; but I have little doubt that the superior manner in which urban extensions are generally planned and laid out to-day in Germany adds very appreciably to the cost. When that pleasant feature of German urban life is extolled, the accompanying drawback should not be forgotten. This brings me to the question of quality.

Quality of Housing. -Quantity and quality are often found in inverse ratio, and that is to some extent the case

with housing; it is easier to satisfy a low than a high standard. Where scarcity is acutely felt in England, it is chiefly due to improvements and the abolition of slums; but the inference must not be pushed so far as to assume that the superiority in quantity which belongs to England is necessarily gained at the expense of quality and entails a corresponding inferiority in that respect. Some inferiority there is; the older urban movement, noted above, has left us with more slums on our hands. The word "slum" possesses no precise meaning and has never, so far as I am aware, been defined. What I understand by it is an area, which may be large or small, of houses marked by lack of air and space, by dilapidation, darkness, damp and dirt, singly or in combination. These defects are more often found in older than in newer towns, partly through the mere lapse of time and partly on account of the character of the building, which took place at a period when no attention was paid to what we call sanitary conditions. Our old sea-port towns are the oldest, and being the oldest are the worst; but the inland towns are far from guiltless, and I have already given a good deal of detailed evidence on the point in connection with Bradford, Sheffield and Wolverhampton. The old crowded courts and back-to-back houses described furnish typical insanitary conditions.

The slums must be conceded; nor are they all old, as I have pointed out in the case of Bradford. The "housing problem" in England is, in fact, the problem of slums; it is one of quality rather than quantity except in so far as the improvement of quality entails deficiency of quantity. The slums are the chief seat of over-crowding, because the very poor congregate in them. During the last fifteen years I have examined so many of them in so many towns that I am not likely to underrate the magnitude or the importance of the evil as a feature of urban life; but I cannot insist too strongly on the fact that it is not an increasing but a diminishing evil. Astonishing improvements have been effected during the last ten, fifteen and twenty years, mainly through the operation of the public health laws. Some of our worst towns have been transformed; and the process is going on continuously, not

uniformly, indeed, nor rapidly enough to satisfy medical officers of health, who are the most enthusiastic of all idealists, but still progressively. I am sure this is not at all realised. To judge from what is daily said and written on the subject, the prevailing notion is that the large industrial towns in England are practically all slums and going from bad to worse, so that the process of urbanisation implies a constant worsening of the conditions of life for a constantly increasing proportion of the population.

I beg to enter an emphatic protest against this assumption, which is quite contrary to the facts. The proportion of insanitary housing is, I repeat, a diminishing quantity, though its amount varies greatly in different districts.

Apart from slums, working-class housing in England is generally of good quality and sometimes very good. The prevalent type is the four-roomed cottage, built of brick or of stone with slated roof: it has two rooms on the ground floor, one being the kitchen which is used as a living-room, and two above. It always has a yard at the back and sometimes a space in front. There is a tendency to increase the size, and newly built houses now often have five or six rooms and a bath-room with hot and cold water. A constant supply of water is now always laid on in towns and sometimes in villages. Water-closets are not yet universal, but are steadily extending in all towns; the process of conversion is continuously going on, though not yet complete; privies and middens have given place to pails and waste water-closets, the latter to full water-closets.

In Germany also old slums exist and have been energetically dealt with in recent years. The only means of making a comparison is by actual observation, and I have spared no pains to inform myself as fully and accurately as possible by external and internal inspection from which I have derived a very decided impression that, apart from over-crowding, insanitary housing is less common in Germany than in England. This is not due merely to the larger proportion of old premises in England, but quite as much to the superior habits of the people in Germany. The home is rarely neglected; inadequate it may be in size, but it is kept clean and decent as are the children. In England we have a class, diminishing but still pretty

large, which turns any quarter that it inhabits into a slum. This class is much less numerous in manufacturing than in trading centres, which accounts in some measure for the very superior housing of the former. No popular delusion is more contrary to the fact than the belief that foreigners are dirty compared with the natives of this country. I have been in the hovels of the rag-pickers in Paris, in the night-shelters of St. Petersburg, in peasants' cottages in Hungary and among the poor in the South of Europe, but nowhere have I seen people so dirty in their persons, and living in the midst of so much voluntary dirt as in this country. Our public sanitation is on a higher general level than that of any other land, but the habits of a considerable section of our people maintain a private sanitation which continually counteracts the efforts of the public health service. As for Germany there is no comparison in this respect. Poor and over-crowded as a German home may be, it very seldom has that horrible air of squalid misery, which is common in London, Manchester, Liverpool and similar towns, or that horrible fetid smell of stuffiness, of dirty humanity and accumulated filth which is much commoner, so common indeed here, and so seldom encountered anywhere else, that it may be called the national smell. In nearly every slum isolated homes are to be found, poor but clean, comfortable and well-kept, bearing witness to the voluntary character of the wretchedness around them.

Dilapidation, as well as dirt, is less common in Germany. Windows stuffed with rags or paper are never seen, rotten floors and leaking roofs very seldom. The construction and fittings of the newer-built houses are good and substantial. Cess-pools, however, are still widely prevalent, though conversion to the sewer system is in progress. Water supply is fair, and sometimes very good.

Insanitary housing has not yet attracted much attention in America, apart from two or three great cities. Public opinion on the subject of sanitary inspection and regulation appears to be in such an early stage that of those municipal committees which issue reports some do not mention it at all, and others are constrained to argue that such inspection is necessary in the public interest. The older and larger towns have their full share of dirt, darkness and dilapida-

tion, but I have been struck by the comparative absence of slums in manufacturing towns of medium size. There is, generally speaking, more light and air about the buildings than in corresponding European communities. Wooden houses are, of course, less solid and durable than masonry, and I have seen some in the last stages of dilapidation, but that is generally corrected by the process of conversion which I have previously mentioned. Old, tumble-down wooden dwellings tend to disappear and to be replaced by brick or stone as the town increases in size and importance. But sufficient care is not taken to ensure good conditions, and there is building now going on which defies all sanitary principles. It is often said, and not altogether without reason, that in England we are creating future slums on the outskirts of our large towns as fast as we clear away the slums in the centre. In America they seem to me to be creating future slums without clearing away the existing ones.

According to my observation, the homes are not so generally well kept as in Germany; with so many nationalities, less carefully trained in domestic duties, it cannot be expected. But ill-kept homes are certainly less common than in this country, where drunkenness and neglect are more frequent among women than anywhere else. The recent investigation of the Bureau of Labour[1] secured some details for a certain (unstated) number of families, from which the following summary table is extracted:—

Condition of Homes, U.S.A.

Nativity of Head of Family.	Per cent. of Houses the Sanitary Condition of which was			Per cent. of Houses in which the Condition as to Cleanliness was		
	Good.	Fair.	Bad.	Good.	Fair.	Bad.
United States .	63·94	29·33	6·73	81·37	12·61	6·02
Foreign . .	58·11	37·00	4·89	77·13	17·60	5·27
Total . .	61·46	32·59	5·95	79·63	14·66	5·71

[1] *Eighteenth Annual Report of the Commissioner of Labour.*

These statistics must be taken for what they are worth; but they are the only ones of the kind that I know of, and they are certainly interesting. The foreign families do not make such a bad show as might have been expected. If they had a somewhat smaller proportion of "good" houses than the natives, they had, on the other hand, fewer "bad" and more "fair". The general result, with only about 6 per cent. of "bad" houses, is creditable; but I should be very much surprised if a similar investigation in Germany did not produce a better result; and if I were allowed to pick my towns in England I would guarantee one quite as good. If, on the other hand, I had to take good and bad together, I am afraid that England would come out with a decidedly inferior record.

To sum up—

1. Housing is cheaper in England than in Germany or America, and cheaper in Germany than in America.

2. House density (number of persons to a house) is least in England and greatest in Germany.

3. Room density (number of persons to a room), and by consequence overcrowding, is least in America and greatest in Germany.

4. Condition of houses is best in Germany and worst in England.

It is not easy to weigh these points against each other and to extract a positive summary statement that the working-classes are "better off" as regards housing in one country than in another. There is room for difference of opinion and for argument. My own view, which is based on somewhat extensive observation, as well as on the study of the statistical information outlined above, is, however, clear, and I give it for what it may be worth. I consider that the advantages of the English cottage system—space, air, light and having "the place to yourself"—outweigh the inferiority of English urban housing in other respects, and being combined with a substantial difference of rent, place the English family in a distinctly superior position.[1]

[1] Mr. Budgett Meakin says, in *Model Factories and Villages* (p. 401), that at the model settlement of Ludlow in Massachusetts it was found that to secure an independent cottage, instead of herding in block dwellings, the workpeople were willing to pay more and take less accommodation.

On the whole, that is to say; I do not mean that the occupants of slum areas, of old crowded courts and back-to-back houses such as I have described at Bradford and Wolverhampton, are better-off than the occupants of tenement houses at Elberfeld or Fall River. On the contrary, I think that the worst housing in England is certainly worse than any in Germany, and probably as bad as any in America; but it is also much cheaper, its amount is comparatively small and diminishing and the occupants are more responsible for its bad condition.

As between Germany and America, I think the preference must be given to the latter, in spite of higher rents. Although some housing in America is worse than any in Germany, more of it is good, and its best is much better than Germany's best.

There remain some points to be noted.

Ownership.—It is often said that a much larger proportion of working-men own their houses in America than in Europe. If the agricultural population be included that is no doubt true, and it is probably true in a lesser degree of the industrial populations also. According to the United States census of 1900, out of the total number of houses of which the proprietorship was known, 46·5 per cent. were owned and 53·5 per cent. were hired; if the farm-houses be deducted the figures are: owned, 36·3 per cent.; hired, 63·7 per cent. That is to say, more than one-third were owned by their occupiers. The proportions vary greatly in different States; ownership is most common in such non-industrial States as the Dakotas, Wisconsin, New Mexico, Idaho, Utah and Nevada; least common along the Atlantic seaboard, South Carolina and Georgia having the lowest proportion of owned houses. Excluding farm-houses we get the following proportions in the more important industrial States:—

The experiment was made of building a few centrally situated modern blocks of flats, but, in the words of the manager, "This venture has not been successful at all so far, since no one apparently wants to live in a block, no matter how modern and well contrived. Cottages have had their educational value, and all prefer to live in separate houses."

State.	Percentage of Owned Houses.	Percentage of Hired Houses.
New York	26·2	73·8
Pennsylvania	34·4	65·6
Massachusetts	31·6	68·4
New Jersey	31·0	69·0
Rhode Island	25·6	74·4
Connecticut	31·8	68·2
Illinois	39·5	60·5
Ohio	43·8	56·2
North Carolina	27·7	72·3
South Carolina	18·6	81·4
Georgia	20·3	79 7
Alabama	22·1	77·9

More instructive is a table stating the proportion of houses owned by private families in the chief cities, together with the proportion of such houses owned, free or encumbered; for a large proportion of houses nominally owned by their occupiers are not really so. I extract the following particulars for the same great towns which I have used above to show the house density:—

City.	Percentage of Owned Houses.	Percentage of such Houses Encumbered.
New York	12·1	57·8
Chicago	25·1	52·7
Philadelphia	22·1	45·3
St. Louis	22·8	37·6
Boston	18·9	51·1
Baltimore	27·9	26·5
Cleveland	37·4	43·0
Buffalo	32·9	51·9
Cincinnati	20·9	33·6
Pittsburg	27·2	44·3
Newark	21·1	59·6
Jersey City	20·0	44·9
Providence	21·0	47·6
Rochester	37·8	51·2
Toledo	43·0	42·3
Allegheny	25·5	36·6
Columbus	31·2	41·9
Worcester	24·9	64·9
Syracuse	37·4	55·6
New Haven	26·6	59·9
Paterson	23·2	60·5
Fall River	18·0	58·8

Of course these figures apply to all families and do not indicate the proportion of those belonging to the working classes that own their homes, but they suggest that the number is considerable in some of the communities cited. I notice, however, that the most purely industrial of them all, namely, Fall River, has the lowest proportion of any, except New York, and that most of the owned homes there are encumbered.[1] I have thought it advisable to give these authoritative details at some length, because there is a great deal of loose talk about the ownership of working-class homes in the United States. The information will help the inhabitants of other towns to make some sort of numerical comparisons for themselves. I have not been able to get sufficient *data* to make it myself, but it is an interesting point and worth following up. My belief is that ownership is more prevalent in America than in England, but the difference is not so great as is often assumed. In many of the English manufacturing towns in the North and the Midlands a very appreciable portion of the working-class families own their homes completely or incompletely. In Germany the number that do so is comparatively very small.

Housing Agencies.—In all industrial and commercial countries the greater part of the housing is provided by persons who build and deal commercially in houses and are commonly called "speculative" builders, though I do not see that their business is any more speculative than others, or why a speculative builder is an evil person while a speculative grocer or manufacturer or doctor is all right. The builder supplies a public want, and though he is generally abused it is he who really solves, or does most to solve, the "housing problem". But his activity is supplemented and to some extent corrected by other agencies, which have both negative and positive functions in the prevention of bad housing and the provision of good. The first of these functions is exercised by the local authority, with the assistance of sanitary or building laws, and it comprises both the abolition of old insanitary dwellings and the regulation of new ones. In Germany and in England much greater attention is paid to both than in America, as

[1] With regard to nationality, the Scandinavians and Germans have the highest proportion of owned homes, then natives of America and after them the British.

I have already indicated. No doubt this is necessary, and it has produced the improvements noted, but there is a danger of too much regulation. When bad housing is abolished at a rapid pace and at the same time building is discouraged or made dear by too stringent regulations the result is that poor families can find no homes at all or only homes which are beyond their means. And this condition is aggravated by the constantly rising standard of ease and comfort which, among other things, results in the refusal of accommodation to children.

The difficulty has developed the positive housing agencies, the function of which is to provide houses. They may be classified under the following heads—self-help, philanthropy, socialism. The self-help agencies include building, co-operative, friendly and similar societies; philanthropy is represented by the employers of labour, endowed trusts or corporations; socialism by the State and the municipality. It is only possible to deal very briefly with them here.

In England the most important are the first class. The building societies reached the highest point of prosperity in 1887, when they had a capital of 54 millions; in 1895 it had fallen to less than 43 millions, but in 1903 it had risen again to 48 millions, and there is probably quite as much building activity of this sort as ever, if not more, for the co-operative and friendly societies have replaced the diminished activity of the building societies proper. The operation of philanthropic and municipal building is practically confined to London, if we except the proprietors of industrial model villages, which are not numerous, and the tentative efforts of a few provincial municipalities. In London, the County Council and various trust societies have erected a large number of tenement buildings which have transformed some areas; but this is quite peculiar to the capital. I have not been able to obtain any comprehensive figures of results, but the Registrar of Friendly Societies reckoned in 1901 that the building societies had enabled a quarter of a million persons to become the proprietors of their own houses.

In America also self-help has been by far the most prominent of the agencies. A number of different organisations based on the principles of thrift and co-operation are classed together as "building and loan associations".

They apparently originated in Philadelphia about 1830, and have always flourished there, which perhaps accounts for the exceptional character of the housing in that city. In 1901 the Commissioner of Labour estimated the total number of such associations at 6,000, with a capital of 120 millions. The large proportion of owned houses in the United States is doubtless due to the great development of these concerns. The only form of philanthropic housing, so far as I can ascertain, is to be found in the model villages, but the aggregate results of these are relatively insignificant.

In Germany, on the other hand, the greater need has stimulated more varied effort, and though the self-help agencies are comparatively young and undeveloped, they have grown rapidly in numbers and activity. Some comprehensive information of what has been done in the Rhine-Westphalian provinces is available, and I summarise it thus.

1. The State has provided housing for its own servants and principally for the subordinate classes of railway men. In October, 1901, there were built or building in the two provinces 473 houses, containing 2,231 dwellings and 7,009 rooms, at a cost of £451,160, including sites. The interest on the total outlay comes out at 3·65 per cent. These houses are principally situated in the railway districts of Essen and Elberfeld, where the need is greatest. Further, in the Saarbrück coal mines, which belong to the Prussian Government, a system of helping the men employed, who numbered over 40,000 in 1900, to build their own houses by means of gifts and loans has been developed on a large scale. The gifts are to the value of from £37 to £45; the loans are free of interest up to £75, and at 3½ and 4 per cent. beyond that. The conditions are that the recipient shall be married and the owner of a building plot free of debt. The houses so built are, as a rule, single cottages for one family. The loans are repayable in ten years. Down to 1901 the total provided in gifts and loans amounted to £767,725. In addition, the administration itself erected houses for 441 families.

2. *Local Communities.*—Some municipalities provide houses for their own servants and for needy families; but a number of local authorities have gone beyond this and have built houses for the lower classes at large. This has

been done in fifteen Rhine districts and five Westphalian. The earliest was the Merzig district, which was stimulated to the step by a housing investigation in 1894. Among the most active is Düsseldorf, which had in 1901 built dwellings for 141 families; 80 of the tenants were in the service of the municipality. The 141 dwellings were thus classified: 43 of two rooms, 85 of three rooms, 13 of four rooms. Local authorities have further promoted building by lending money from the public savings banks at low interest, and by co-operating with building societies in various ways. They provide cheap building sites, take over shares, guarantee interest on loans, facilitate the laying out of streets, and reduce the ground and building rates.

3. *Building Societies.*—Details from 109 societies in the Rhine province were furnished to the Düsseldorf Exhibition in 1902. The 109 consisted of twenty share companies, four limited liability companies, eighty-three registered societies, and two others. To these may be added thirty-seven unions in Westphalia, which also furnished details. Putting them together we get the following:—

Houses.	Dwellings.	Rooms.	One-Family Houses.	Two-Family Houses.	Three-Family Houses.	Four or more Family Houses.
3,877	9,714	32,467	748	2,155	377	567

Three-fourths of the houses, therefore, only contain one or two families. They are, in point of fact, semi-detached, and with gardens in the majority of cases, and are obviously a great improvement on the tenements of the speculative builder. The total expenditure on sites and building was £1,657,602. Of the houses 2,631 were sold and 1,216 were let: the amount paid off on those sold was £231,863.

Of the families occupying them, 9,331, or all but 383, belonged to the labouring class. The membership of the registered societies included was 18,428, of whom 14,226 belonged to the labouring classes. This is a substantial record for the very short time—not more than two or three years—during which the greater number of the societies had been in active existence. Not the least service they

have rendered is the steady adherence, except in the more central parts of the larger towns, to the principle of small houses and ample ground space. In the year 1901 more than one-fifth of the new housing required by the increase of population in the Rhine province was provided by the foregoing agencies, and was therefore of a superior character. Unfortunately, the rest of Germany has by no means exhibited an equal activity in this direction. It is reckoned that between one-fourth and one-fifth of the total co-operative building in the empire has fallen to the share of this single province. The total number of building societies in Germany at the end of 1899 was 356, of which the Rhineland claimed ninety-four. The exceptional efforts in this district have been largely due to the formation of a general building association in 1897, having its seat in Düsseldorf and enjoying the support of the provincial Government. The committee consisted of representatives of local authorities, and several previously existing building societies and companies and private manufacturers. Its origin is traced to the Old Age and Infirmity Insurance Law of 1889, which opened the way to a new movement in co-operative action. The association has stimulated the formation of new building societies with great success, and has promoted the housing movement in various ways. One of them is particularly interesting from the industrial point of view. Prizes were offered for designs for model furnishing, not to exceed the following cost: Kitchen, £8; bedroom (with one double bed), £10 10s.; living room, £12. They produced 122 sets of designs, many of great merit.

Similar associations have been formed in Frankfurt, Münster and Wiesbaden; but the earliest example is the "*Arbeiterheim*" association in Bielefeld, founded by Pastor Bodelschwingh.

4. *Philanthropic Endowments.* — These are rather scanty. The most considerable is the Aders fund at Düsseldorf. The testator, a judge, left about £100,000, of which half was to be applied to educational purposes and half to the provision of dwellings at moderate rentals for factory workers, or others of the same class who were not in receipt of Poor Law relief. The town took over the fund in 1890, and in 1902 had provided out of it dwellings for 257 families, while the fund itself had risen to the value

of £82,100. As it increases, in the course of time, it will play a correspondingly important part in the matter of housing. Other endowments in the district are the Krupp fund of £25,000 at Essen, the Guilleaume fund at Cologne, the Hösch fund at Düren and the Simonson fund at Godesberg. The aggregate number of dwellings provided from these endowments in 1902 was 364 at a cost of £107,300. They are only for rent, not for sale.

5. *Employers.*—In Germany manufacturers and mine-owners have provided a great deal of housing quite apart from "model" settlements. Employers have indeed done more for housing than all the other agencies put together. In 1902 the two provinces could show the following remarkable record, pretty evenly divided between them :—

Houses.	Dwellings.	Total Expenditure.	Loans and Gifts for Building.
22,269	62,539	£ 10,466,960	£ 268,896

Of the total number of families so housed more than half belonged to the mining industry. Their distribution, according to the census classification, was as follows :—

Mining, 32,396 ; iron, 16,471 ; textiles, 6,659 ; quarrying, 3,987; various, 3,026. Naturally, the housing provided for the mining population is chiefly situated in Westphalia, where about 19,000 dwellings have been built ; and the same industry accounts for £110,000 of the loans granted for building. The other industries preponderate in the Rhine province.

It is hardly necessary to add that savings banks, whether public or private, play an all-important part in the building and acquisition of workmen's dwellings.

One other agency which does not provide but greatly facilitates housing ought to be mentioned, and that is modern means of locomotion and particularly the electric tram or street railway. It is common to all three countries, nor is there much difference in the use made of it ; but that will be further discussed in a subsequent chapter under the head of "Locomotion".

CHAPTER XII.

COST OF LIVING AND PHYSICAL CONDITIONS.

THE cost of living, though a simpler question than some of those previously discussed, is not really simple; and the more closely it is examined the less simple it appears. It may admit, perhaps, of a broad answer, but certainly not of a very exact one.

The most complete classification of the items of expenditure comes, as might be expected, from Germany; it lays down six main headings and twenty sub-headings. I will reproduce them in full in order that the reader may see how complicated the subject becomes when it is approached in a thorough and methodical manner.

I.—Necessaries of Life:—
- (*a*) Rent, Fuel, Light.
- (*b*) Clothing.
- (*c*) Food: at Home and in the Eating-house.
- (*d*) Locomotion (Tram, Omnibus, etc.).
- (*e*) Tools.

II.—Compulsory Disbursements:—
- (*a*) Contributions to Sick Insurance, etc.
- (*b*) Taxes.
- (*c*) School-pence and Books.

III.—Bodily and Mental Recreation:—
- (*a*) Baths.
- (*b*) Public-house.
- (*c*) Spirits (presumably at Home).
- (*d*) Tobacco.
- (*e*) Newspapers and Books.
- (*f*) Amusements.

IV.—Voluntary Subscriptions:—
- (*a*) Insurance.
- (*b*) Club and Trade Unions.

V.—Other Regular Expenses.

VI.—Extraordinary Expenses:—

(*a*) Doctor, Medicine, Sickness.
(*b*) Furniture, Breakages.
(*c*) Debt, Interest and Repayment.

Not all these headings are applicable to other countries; but it is obvious that the list, complete as it is, is capable of a great deal of further subdivision. Happily it is not necessary to go through all these items in order to compute broadly the relative cost of living. The important thing is the first heading, but the second must also be borne in mind, and particularly the taxes.

Of the necessaries of life we have already dealt with one large item—namely rent—in the last chapter, and we found that, broadly speaking, housing in corresponding localities is about twice as dear in America as in England, and that Germany comes between them. We now come to the cost of food, which represents roughly about one half, more or less, of the total expenditure of working-class families.

The cost of food can be ascertained in two ways, either by asking consumers what they pay for various articles or by asking dealers what they charge. The latter is very much the better way of the two, because the prices of most articles vary widely according to quality and the price which is given or alleged to be given by a particular family is no real measure of the cost at which the article can be obtained. For instance, in the report on retail prices compiled by the British Board of Trade in 1903 the price of tea is frequently put down as 2s. 6d. a pound and even more; but it would be absurd to take that as the price for which tea can be obtained. This objection applies in some degree to almost every article of food, and it is strengthened by the tendency to name higher rather than lower prices as a point of pride. Many housewives would be torn to pieces sooner than admit that they are in the habit of buying inferior qualities. They are also prone to insist on the high price of things as a grievance. The dealer is rather disposed to emphasise the lowest prices, but that can be corrected by a little inquiry, and he has not the same inducement to make out a case. Of the two, therefore, the shop or market prices are a much safer guide than the

statements of consumers; but the latter should not be ignored and the best way is to obtain both and check them by each other. I have made a point of doing so in many of the selected towns described in the first volume, and the information so obtained has enabled me to read official and other published lists with due discrimination.

By far the fullest *data* are available for the United States and they are contained in the eighteenth annual report of the Commissioner of Labour. They were obtained by special inquiry from upwards of 800 dealers in more than 100 towns distributed in thirty-three States; they give the prices of twenty-seven articles for each year from 1890 to 1903, and that in embarrassing detail. There are, for instance, from twenty to forty different quotations for fresh beef alone in several towns. The best way of extracting some compact but fair information from this huge mass of figures is to name the highest and the lowest quotations; and in my experience that is the only trustworthy way of dealing with food prices, because of the variations in quality. The only comparable information for England is that contained in the Board of Trade report already mentioned. It gives a considerable number of quotations from several towns for the principal articles of food in the years 1900 and 1901. Unfortunately they were not obtained in the same way, but from consumers, and to any one who has investigated the subject it is at once apparent that superior qualities of many of the food stuffs are unduly predominant, notably in the case of bread and meat. The majority of the quotations only refer to the better qualities of both. For Germany tables of retail prices, compiled from official sources, are given in Neefe's *Statistisches Jahrbuch* for a number of articles in some twenty representative towns for a series of years. As the English returns are not brought down later than 1901 I will take that year for purposes of comparison and will reduce the measures and money values to the English standard; but it is to be noted that since 1901 prices have risen considerably for many important articles in the United States, which is not the case in England or, except quite lately for meat, in Germany. The American schedules given in the report cover very much wider ground than the English and the German ones, which

only refer to selected towns of a commercial or industrial character. To make the comparison valid, therefore, it is necessary to select from the American list towns as nearly as possible of the same character. We then get the following result:—

RETAIL PRICES OF FOOD, 1901.

Article.	England.	Germany.	America.
Beef per lb.	4½d. to 11d.	5½d. to 9½d.	5d. to 1s. 5d.
Mutton ,,	4½d. to 1s.	5½d to 9d.	3d. to 1s.
Veal ,,	...	6½d. to 9½d.	5d. to 1s. 2d.
Pork ,,	...	7½d. to 10½d.	4d. to 8d.
Bacon ,,	6d. to 11d.	8½d. to 11½d.	5½d. to 10½d.
Flour ,,	1½d. to 2d.	1½d. to 2½d.	1d. to 2d.
Bread, 4 lbs.	4½d. to 6d.	3d. to 6d.[1] (rye)	10d.
Milk per quart	3d. to 4d.	2d. to 5d.[2]	2½d. to 4d.
Eggs per dozen	9d. to 2s.	7½d. to 1s. 2d.	9d. to 1s. 4d.
Fish per lb.	4d. to 8d.	...	4d. to 1s.
Butter ,,	10d. to 1s. 6d.	11½d. to 1s. 2½d.	11d. to 1s. 3d.
Sugar ,,	1½d. to 3d.	3⅜d. to 4d.[2]	2½d. to 3½d.
Cheese ,,	6d. to 1s.	...	6½d. to 10d.
Rice ,,	2d. to 4d.	...	2½d. to 5d.
Tea ,,	1s. 4d. to 2s. 8d.	...	1s. 8d. to 3s.
Coffee ,,	10d. to 1s. 10d.	1s. 2½d. to 1s. 9d.	7d. to 1s. 9d.

This table requires some further knowledge for its correct interpretation. The variations are due to difference of locality as well as of quality; for instance, the prices of many things are exceptionally high in Leicester, Mannheim and Boston, to take some cases at random. But quality is the main cause, and this is probably the reason why the range of fluctuation is less in the German column; more effort has been made to secure uniformity in the returns. Now this question of quality obviously complicates the task of making comparisons, and the complication is much greater than appears on the surface; for articles of food not only vary in price and grade in the same country, but they vary absolutely in quality between different countries;

[1] Baked wheaten bread is seldom bought by working-class families in Germany.

[2] Obtained from my own inquiries, not given in the *Statistisches Jahrbuch*. According to a return published by the British Board of Trade the price of sugar, as consumed by the working-classes in Berlin, was 2¾d. a pound in March, 1905.

the best or the cheapest in one is by no means the same as the best or the cheapest in another. This fact, though a commonplace of observation in ordinary life, is ignored by statisticians and dietarians, if I may coin a word; to them beef is beef and bread is bread, but the incomparably subtler analyst dwelling in every living thing discovers vital differences which are quite beyond the ken of the test-tube, the microscope or the scales.

Looking at the columns given above as they stand anyone would gather the impression that, with one exception, there is not very much difference. The exception is the high price of baked bread in America; it is double the price of bread of the same quality (made of American flour) in England. There is no doubt about the fact, which I have corroborated for myself in a number of towns in different States. I suppose the reason is that baker's bread is something of a luxury and home-baking the rule, as it still is in Scotland, in some towns in the north of England, and in rural districts generally. But for this exception, the importance of which English urban housewives will appreciate, the differences do not seem very great: and it would be easy to suppose that on the whole the average cost of food works out at much the same. If the German prices of meat are not so low, neither are they so high, and eggs are appreciably cheaper; if tea is cheaper in England than in America, coffee is dearer. And so on; it would be easy to make out a plausible balance. Germany may perhaps be at some little disadvantage, but in America the cost of food can be made out to be much the same as in England. I have in fact often seen that stated; but anyone who believes that it represents the truth in actual life is deceived. Some people like to be deceived and I am not concerned to deprive them of that pleasure; but others like to know the truth, and having been at great pains to ascertain it for my own enlightenment, I will put the results at their disposal.[1]

[1] The cost of food in protected countries as compared with Great Britain has been a prominent subject of dispute in the "fiscal controversy" and has undergone the usual fate of all subjects which get dragged into politics; the truth is the last thing either side wants to know unless it confirms their prejudices, which is seldom altogether the case.

If an English workman living at Bolton or Bradford or Sheffield emigrates with his family to Fall River or Philadelphia or Pittsburg—or from any English manufacturing town to a corresponding one in the United States—and expects on the strength of the foregoing or any other figures, to buy the food he is accustomed to eat at the price he is accustomed to give, he will meet with a great disappointment. He will get some things cheaper, to wit fruit and poultry (which he never buys at home); and some things at about the same price, or a little less, to wit milk, eggs and bacon; but bread, meat, vegetables and sugar will cost him quite half as much again. This estimate is based on prices ascertained on the spot and confirmed by English workmen resident in America from their experience of both countries. The apparent discrepancy between it and the conclusion suggested by the table given above is explained by several circumstances. My prices were obtained in 1903, when several articles, and meat in particular, were considerably higher in America than in 1901. All the people I asked complained of the high prices, which they attributed to "the trusts," but whether that was the true cause or not I am unable to say. On the other hand I found the English prices lower than those published by the Board of Trade, which do not adequately represent the cheaper grades of food. To comprehend the subject it is necessary to understand the question of quality. There are in England two distinct grades, both of meat and bread; there is (1) English meat, and (2) foreign meat; there is (1) best bread, and (2) bread. In regard to meat, of course different parts of an animal fetch different prices, but, part for part, foreign meat is always less than English meat. The following prices, supplied to me by the joint deliberations of a number of workmen and their wives in the Midlands illustrate the distinction:—

	1 lb.
English meat	4d. to 7½d.
Foreign meat:—	
Beef	2½d. to 5½d.
Mutton	3½d. to 6d.
Steak	7d.

The top price given here is not high enough; English steak, corresponding to the "foreign" at 7d., should be 10½d. or even 11d., but no doubt meat of this quality was not bought by those workmen. Nor is it bought in America; it is not to be had there at all. The meat in America is of the same quality as "foreign" meat in England; it is fairly good meat, but not equal to the home-grown. The difference is greater with mutton than with beef; American mutton is very inferior, and not so good as the foreign (New Zealand) mutton sold in England. The best English mutton is a thing apart, not to be obtained anywhere else. The lowest prices named by the workmen are much below those of the Board of Trade, but I have repeatedly seen meat sold at these prices on Saturday night, though I can quite understand that individuals, asked to fill up schedules, might not be purchasers of it or might not like to say so even if they were. What I actually found was that meat which is 4d. or 5d. in England is 6d., 7d. or 8d. in corresponding towns in America; meat which is 7d. or 8d. in England is 10d. or 11d. in America; meat which is 10d. or 11d. in England is not to be had at all in America.

With regard to bread the case is somewhat similar. "Bread" is made from foreign flour alone; "best bread" contains some English wheat. It is more expensive because English flour contains more moisture by nature and consequently takes up less in the process of baking, so that a given quantity produces fewer loaves. The foreign flour is chiefly American; it is esteemed by millers and bakers for the opposite reason. It has more "strength," as they say; that is to say, it is drier, takes up more moisture and makes more loaves. But it is comparatively tasteless and becomes dry very soon by rapid loss of the moisture taken up in baking. English flour has more flavour and bread baked with it keeps moist longer. Thus that which is called "best bread" in England and costs 6d. the 4 lb. loaf is not to be had at all in America; American bread is of the same quality as the cheaper grade in England. It was priced at 4d. the 4 lb. loaf by the same workmen in the Midlands; but 4½d. as given in my comparative table is, perhaps, more common. The price of bread varies greatly

in England at different times and in different localities. The cheaper quality is sometimes as low as 3½d. the 4 lb. loaf while "best bread" may be 7d. In the United States it remains with astonishing uniformity at 5 cents. the lb. or 10d. the 4 lb. loaf. When bread is baked at home the cost is much less, but something must be allowed for fuel, yeast and labour. The price of flour is but little higher in America than in England; it is usually a fraction over 1d. a lb. in both countries, but in England the fraction is much less than a farthing, generally ¼ of a penny (14 lb. for 1s. 4d.), in America it is between ¼d. and ½d.; 2d. is quite an exceptional price in either country and only paid for special brands.[1]

The case with regard to Germany is somewhat similar. German beef is very fair and as good as the American, but not equal to English; the mutton is very poor; pork and veal are much the same in all countries. As for prices, I estimate them to be somewhat higher than in America for corresponding qualities. Wheat flour is also dearer in Germany, but rye bread and flour are cheaper. This is commonly called "black" bread and the expression is erroneously used as a term of contempt. Rye bread is excellent and particularly appetising; it is commonly served in first-class German hotels with white bread, as "brown" bread is sometimes served in England as a delicacy. For my own part I prefer the rye bread on account of its flavour and always ate it for breakfast in hotels.

I have said that vegetables are dearer in America than in England. Potatoes are the most important, but it is not easy to make an exact comparison as they vary so much and are sold in so many different ways by measure and by weight; the price in America ranges from 3s. to 10s. a bushel; in England potatoes are more often sold by weight, but where measures are used the price is from 4s. to 4s. 8d. a bushel. English workmen in America informed me that potatoes and other vegetables were dearer where they lived

[1] I speak with some confidence on the subject of bread, having taken an interest in it for years, and having made some experimental investigations with the help of millers, bakers and wheat-growers. The sweetest and most nourishing white bread contains not less than one-third of English flour.

than at home; cabbages, they said, were 1s. and carrots 1d. each. I have not been able to ascertain the retail prices of vegetables in Germany. Fruit is mostly cheaper in America, but not always; in my by no means very well appointed hotel in Philadelphia the price of an orange was 10d. If hotel prices counted, however, the cost of food would be at least double in America.

Sugar is not so cheap now in England as it was in 1901, and the advantage shown in the table above must be discounted.

Fish is an important article of diet among the working classes in England; of the kinds chiefly eaten by them plaice, herrings, mackerel, sprats, ling and others are not known in America, where cod, haddock and halibut are the staple, but as a rule dearer than in England. Whitefish and other native varieties are much eaten in some parts of America, but they are not cheap. Fresh fish does not appear to come within the range of the working-classes in Germany.

My general conclusion is that food is on the whole considerably cheaper in industrial England than in industrial America or Germany, and probably somewhat cheaper in America than in Germany. The markets and the co-operative stores in England are a very important element in the provision of cheap food. They are more general than elsewhere; indeed they are almost universal and form one of the most striking features of English urban life. In Germany the markets are almost always held in the open air only and they do not play the same part in the life of the people as the covered markets in England. Co-operative retail stores are fairly common, but they are on nothing like the same scale as in England, and especially in the manufacturing towns. The English retail societies numbered 1,469 in 1904, with a membership of 2,078,178, and their sales amounted to about £59,311,934; in Germany the co-operative movement has developed more in the direction of agricultural and credit societies, and the retail stores, though an appreciable factor, are comparatively unimportant. In America co-operation has hitherto been a failure, and it counts for nothing; a good many of the great towns have markets, but many have not, including Chicago and

such typical manufacturing towns as Fall River, Lowell, Lawrence, Lynn, New Bedford and Providence. In towns of this class markets are exceptional.

Expenditure on Food.—A great many statistical investigations have been carried out in recent years by means of "household budgets," or schedules, stating the detailed yearly or weekly expenditure on various articles by individual families. No doubt they throw light on the subject and have a certain value, but unless they are on a large scale they may be very misleading. I have had some drawn up for myself by working men, but I am not satisfied of their validity and shall not use them. The same objection applies to other previously published statistics on a small scale. Latterly, however, more adequate *data* have been provided by official inquiries. The most extensive are those of the United States Labour Department,[1] to which I have already made several references. They cover a large number of families in all parts of the States, and though I confess to some lack of confidence in the value of minute details, I have no doubt that the broad results are as trustworthy as it is possible for such statistics to be. An official inquiry by the British Board of Trade on a considerable though not so large a scale, the results of which were published in the Fiscal Blue-book of 1904, enables us to make an interesting comparison with regard to the expenditure on food in the two countries. The British inquiry covers 1,944 working-class families in various parts of the United Kingdom; the American returns, which furnish the best material for comparison, are those contained in Table V. of the Report, and they relate to the income and expenditure of 11,156 "normal families". In both sets of returns the families are classified according to income, and the classes, though not quite parallel, are sufficiently so for the purposes of a broad comparison. The English returns give the weekly income and expenditure on food in shillings and pence; the United States returns give the annual income and expenditure in dollars. I have, therefore, converted the former from weekly into annual values and expressed them in dollars, thus:—

[1] *Eighteenth Annual Report of the Commissioner of Labour*, 1903.

ANNUAL EXPENDITURE ON FOOD IN THE UNITED STATES AND THE UNITED KINGDOM.

United States.		United Kingdom.	
Income.	Expenditure on Food.	Income.	Expenditure on Food.
$	$	$	$
200 or under 300	147	Under 325	187
300 or under 400	186	325 and under 390	232
400 or under 500	218	390 and under 455	270
500 or under 600	249	455 and under 520	289
600 or under 700	265	520 and above (mean 676)	385
700 or under 800	287	...	...

The United States incomes in these returns go much higher, up to $1,200 or over, and the expenditure in the highest class is $383. I have given above those which are most nearly parallel with the classified incomes of the English returns.

It appears from these statistics that the amount spent on food by working-class families having about the same income is from 16 to 45 per cent. more in the United Kingdom than in the United States, but as the amount of food varies with the size of the families, there may be an error here. For an exact comparison the families should be classified also by size. That is done very completely in the American returns, but less so in the British ones, which only give the average number of children to each family as classified by income. However, we can get at it very nearly with a little trouble. The average number of children in the whole of the British families is 3·6; we will compare them with those American families of the same income having 4 children, thus:—

Annual Expenditure on Food.

Class according to Income.	American Families having 4 Children.	British Families having 3·6 Children.
	$	$
Class I. . . .	209	187
„ II. . . .	216	232
„ III. . . .	243	270
„ IV. . . .	276	289
„ V. . . .	298	385

Here the expenditure is seen to be less in British families of the first or lowest class of incomes; but the average number of children in the British families of this class is only 3·1, whereas in the American families the number is 4, so that this class does not afford a fair comparison. If we take American families with 3 children, then the figures for this class are—American, 148; British, 187. On the other hand, in the fifth class the British families average 4·4 children and are not fairly comparable with American families having only 4 children. We will, therefore, take the American families with 5 children, and then the figures for the fifth class are—American, 315; British, 385. To make all this quite clear we will tabulate the amended figures:—

Annual Expenditure on Food.

Class according to Income.	American Families.		British Families.	
	Number of Children.	Expenditure in Dollars.	Number of Children.	Expenditure in Dollars.
Class I. . .	3	148	3·1	187
„ II. . .	4	216	3·3	232
„ III. . .	4	243	3·2	270
„ IV. . .	4	276	3·4	289
„ V. . .	5	315	4·4	385

The mean expenditure for all the families is—American, $266; British $292.

I had no idea what the result would be when I began to work out these figures, but it does not surprise me after my studies from the life, although it contradicts two industriously circulated legends—one that the working-class families are much better fed in the United States, the other that a large proportion of the population in this country is underfed, hungry or starving. All the evidence of every kind that I have gathered emphatically negatives the latter assumption, and my conclusion is corroborated by others.[1] Indeed, if the contention were true, the people must have died of starvation like flies twenty years ago. Between 1880 and 1900 the comparative level of industrial wages rose from 81 to 100, while the cost of food fell from 142 to 100.[2] It is, however, unnecessary to labour the point; the statement is only made to further political or some other interested ends.

I am not in possession of such returns for Germany as would permit of a satisfactory comparison, but something can be gathered from the statistics of 908 families in Berlin published by the Imperial Statistical Office.[3] The families are classified according to the number of persons, not of children. We must, therefore, assume the existence of two parents, and then the German family of 5 persons will be equal to the British and American ones with 3 children. As the British families average 3·6 children each or 5·6 persons altogether, we will take for comparison the German families of 6 persons and the American ones with 4 children. The incomes of the German families of 6 persons range from $250 to $750, so that they are fairly comparable with the British ones as a whole, and with the American ones from $200 to $800. The average expenditure of a family on food works out thus in dollars:—

[1] "From my own experience I cannot bring myself to believe that there are many (boys) who for any length of time suffer the pangs of active hunger" (*Studies of Boy Life in our Cities*, edited by E. J. Urwick). Mr. Rowntree estimated that 9·91 per cent., or less than one-tenth, of the population of York was living on incomes insufficient to feed them adequately; but even this moderate estimate is open to dispute. The dietetic calculations on which he relied are no longer accepted as valid (they never possessed more than a tentative value), and York does not represent our industrial population.

[2] Memoranda, etc., by the Board of Trade (Fiscal Blue-books).

[3] *Reichs-Arbeitsblatt*, March, 1905.

German.	American.	British.
254	261	292

It should be clearly understood that I am comparing families of the same size and income, as nearly as possible; and the conclusion is that within these limits the expenditure on food is a little higher in the American than in the German families, and considerably higher in the British than in the American families. A larger proportion of the income is spent on food in the British families; the mean percentage is 61·09, while that of all the American families is only 43·13, but for American families of like size and income, namely, with 4 children, and up to $800 of income, it is 50·94; in the whole of the German families it is 49·7.

It does not follow, however, that families occupying the same social or industrial position have this relative expenditure in the three countries. The American schedules include families with larger incomes than any in the British and German lists, and in them the expenditure on food is higher. With families of 4 children and incomes of $1,200 or more the expenditure goes up to $430. Also a larger proportion of the American families belong to the higher classes in the scale. It may, therefore, happen that an American family, the head of which is a workman of a given grade, may spend more on food than a British family of the same size and the same grade, because its income is larger. We have no means of comparing the *status* of the families included in the schedules; but, assuming that they fairly correspond, we find that 9,062 out of the total 11,156 American families fall within the $800 limit. The inference is that the average expenditure on food in 9 out of 11 working-class families in America is less than that of similar families in Great Britain. If, however, the whole of the American families be included in the comparison, then the average expenditure for those of the same size, namely with 3·6 children, is slightly higher in the United States than in the United Kingdom—namely, 299 against 292 dollars.

There can be little doubt, since the expenditure on food rises regularly with the income, that the larger relative amount spent by British families is due to the fact that a larger proportion of the income is released for this purpose

by the greater cheapness of other things. The most important item next to food is rent, which has been already dealt with, and shown to be much less. Unfortunately the Board of Trade statistics used above take no account of anything but food, and the same comparison cannot be extended to other items of expenditure. The United States statistics give the proportion paid for rent both in relation to income and expenditure for the 11,156 "normal" families. The average is 17·12 per cent. of income and 18·12 per cent. of expenditure. Mr. Rowntree estimated rent in York at 14·88 per cent. of the income of working-class families, but made no attempt to estimate its relation to expenditure.[1] An inquiry in Dresden placed the average at 21 per cent. of the income. The Berlin inquiry used above puts rent, fuel and light together and places them at 20·3 per cent. of the total expenditure. If they are put together for the United States they represent 23·81 per cent. of the total expenditure.

It is, I think, quite impossible to compare the relative cost of fuel and lighting in the three countries because the methods are entirely different. Coal is certainly cheaper in Great Britain, but in the other countries, which are liable to severer cold, stoves are used in which other fuel can be burnt and gives more warmth at less cost than the open fireplace, the most wasteful and ineffectual method of warming. The open fireplace has its merits; it is more cheerful and by maintaining a good current of air—commonly called a draught—it ensures some ventilation and is a powerful sanitary agent. The relative freedom of this country from tuberculosis is, I believe, mainly due to the open fireplace. But I am here speaking of cost and it is undoubtedly extravagant.

Similar difficulties attend the comparison of clothing and taxes. With regard to the former, the percentage of total expenditure made for clothing in the United States statistics is 12·95, in the Berlin ones it is only 8·1. The standard of quality varies so much and is so difficult to determine that a valid comparison of prices is hardly possible; but my belief is that the difference of expenditure

[1] *Poverty*, by B. Seebohm Rowntree, p. 165

shown by these figures is due more to the comparative cheapness of clothing in Germany than to a superior standard of clothing in America. I have had many good opportunities of observing the clothes worn by both adults and children in all three countries and have paid the closest attention to the point. The impression I have gathered is that the general standard of clothing among the working classes is quite as high in Germany as in America. Both men and women are sometimes more finely dressed in the latter, but the general level in all essential respects is no higher. In particular, I have carefully noted the appearance of large numbers of men and boys out of work and waiting at the labour offices in Berlin and elsewhere; they have all without exception been well clothed, better clothed than the men I saw paraded for a strike procession of cotton operatives at Lowell. In England, and still more in Scotland, rags and dirt are commoner. The difference is most striking in the case of children who are far more often wretchedly clothed than in Germany or America. We all know those children and the chief cause of their condition —parental neglect. Another thing which produces an unfavourable impression in this country is the practice, to which I have already referred, of wearing filthy clothes and affecting a ruffianly appearance, habitually pursued by working-men. It is deceptive: it looks like poverty but is merely custom; they can afford and possess excellent clothes but they will not wear them until the week's work is over. So far as I can learn shoddy and inferior clothing is but little dearer in the United States, but good clothing is very much dearer. A suit of clothes which can be bought for £2 or £3 in England costs £4 to £6 in America; and similarly with some other articles. An English workman told me his experience with regard to hats. He brought with him to the States a felt hat which he had bought for 7s. 6d. When it got rather shabby he went to buy a new one and asked for a hat of the same quality; the price was 28s. which he could not give. The shopman suggested that he should have the old one cleaned, and when this was done the old seven-and-sixpenny one was even then better than the 28s. one, as the shopman himself pointed out. Boots, on the other hand, are cheap; a good

pair can be had for 8s. to 12s.; they are not durable and will not stand heavy wear but otherwise they are of fair quality and good value. Shirts are also cheap, perhaps cheaper than in England. My conclusion is that clothing as a whole is cheapest in Germany and next in England.

Taxes cannot be compared without extreme difficulty, because they are raised in so many different ways; and any attempt to compare them would cost far more time and space than the point is worth for the purposes of this inquiry. As an item of expenditure they are relatively unimportant. The Berlin analysis assigns ·9 per cent. of the total expenditure to "taxes"; the statistics of 2,567 families in the United States, published in the same volume as the statistics used above, place the amount at 2·1 per cent. for those families which paid taxes, but these were only about one-third of the total number. It appears, therefore, that the bulk of the working-classes in the States escape direct taxation, as in England, but no doubt they contribute to local taxation through rent, and, of course, they contribute to the State taxation through the customs; but that takes effect in the cost of living under other heads. In Germany, on the other hand, the working-classes pay income tax on all incomes exceeding £45 a year, as well as the indirect taxes.

Another burden peculiar to Germany is compulsory insurance, which represents the appreciable proportion of 2·1 per cent. of the total expenditure (Berlin statistics). The working-classes also pay, except the poorest, a small amount for schooling, chiefly for books and evening continuation schools.

Locomotion is an item of varying importance, according to the local conditions. In Berlin, it amounts to 1·9 per cent. of the total expenditure, but it is not separately recognised in the United States returns. It practically means tram fares. These are cheapest for short distances in England, where the unit is 1d. and, less often, ½d.; in Germany the unit is 10 pfennigs, or one-tenth of a shilling, but that sum is good for much greater distances, even up to several miles; in the United States the unit is 2½d., which does not, as a rule, cover longer distances than 1d. in England.

Of the remaining items of expenditure some, such as drink, newspapers, amusements and tobacco, can scarcely be included in the necessary cost of living, though they represent a substantial and sometimes a large proportion of the actual expenditure. Others which are more indispensable, such as furniture, utensils and medicine, vary so greatly with individuals that no general estimate can be formed of their relative cost. Furniture, etc., stands for 1·1 per cent. of the total expenditure in the Berlin statistics and 4·3 in the American ones. This difference is no doubt largely due to the greater number of rooms to a family in the United States; but the things are also dearer. It may be said roundly that nearly everything is much dearer in America than in Europe. There are many little things which are not mentioned in household budgets but nevertheless enter into daily life, such as hair-cutting, shaving, washing, boot-cleaning and so on; and all of them cost two, three or four times as much in America. The lowest price at a music-hall or other cheap place of entertainment is 5d., against 2d. in England and 10 pfennigs in Germany; the entrance fee to a base-ball match is 2s., against 6d. or 1s. to a corresponding entertainment in England; newspapers are commonly 2½d. or 1½d. against 1d. and ½d. This relatively high cost runs through the ordinary and the extraordinary round of daily life. It has been said that the cheapest way to take a cab in New York is to buy the horse and cab and give them away at the end of the journey; and that humorous exaggeration has a basis of sober fact.

The general conclusion is that the cost of living, inclusive of rent, is lowest in England and highest in America. The items that go to make up the total are so numerous and the circumstances and customs are so diverse in different countries that it is impossible to state the relation numerically with any exactness; but the differences are certainly considerable. As between England and America they are probably sufficient to neutralise the difference of wages in the case of skilled workmen living in large industrial centres. Several such workmen in different towns have told me that the higher cost of everything does in fact swallow up the advantage, and I have

met with none who stated the contrary. But these were men who could command good wages at home, and I am not able to say that the same proposition would hold good of all workmen and in all places. As between America and Germany it would not hold good, because the difference in wages is greater and in cost of living less.

Physical Condition.

I introduce the subject of the physical condition of the people here because it is generally thought to be dependent on housing and the cost of living, and because I am not going to give much space to it. That is not because I think it unimportant, but rather the contrary. The bedrock foundation of all national strength and efficiency is physical; and the importance of what I call national vitality is not, in my opinion, sufficiently realised. But its adequate treatment would occupy more space than I can afford and would extend beyond the proper scope of these volumes. I have, as a matter of fact, written and rewritten two long chapters on it, but have decided to throw them overboard, and to confine myself to a few observations on the comparative physical characters of the people in the three countries. They are necessarily few because they rest entirely on impressions, as no other *data* are available.

The physical effect of urbanisation has been the subject of much discussion in England and Germany, chiefly in relation to military efficiency. In the former the recruiting returns have raised the question of "physical deterioration" and led to a Government inquiry. It was alleged that in consequence of progressive urbanisation the population is physically deteriorating and unable to furnish recruits of the previous standard. A Committee was appointed to investigate this alleged deterioration and it issued a Report under the date of 20th July, 1904.[1] As everyone who had studied the subject expected, the Committee found that there was no proof of deterioration, as the necessary *data* for making a comparison of the present with the past do not exist. The recruiting returns

[1] Cd. 2175.

prove nothing with regard to the general population, since joining the army is quite voluntary, and a lower standard of physique in those offering themselves might be due to the fact that they belong to a lower class; but the returns in recent years do not, in fact, indicate a lower physique. Having no valid evidence to prove or disprove deterioration the Committee turned its attention to "degeneration" and its causes.

"Degeneration" is a term used in medical literature to signify departure from the normal standard of health and strength. Everyone knows that a certain number of individuals are weakly or afflicted or otherwise physically incapable. That occurs, so far as we know, throughout the living world; it is, indeed, the fact on which the theory of evolution rests. In all civilised countries an enormous number of costly institutions are maintained for the benefit of such degenerates among human beings; their sufferings and needs are always before us and appeals on their behalf are always in our ears. This is nothing new, but the report of the Committee, dealing with the causes or supposed causes of such degeneration, is commonly described as "appalling". The use of this expression indicates a great deal of misapprehension except when it is merely a lever to further some particular project. There is nothing appalling in the report. It does not prove that degeneration is more prevalent than formerly; if so, it would establish deterioration, which the Committee expressly disclaims. It does not even prove that the causes of degeneration are more prevalent. On the contrary, it demonstrates that great improvement has taken place in the most important conditions of life. For the rest it contains a great many opinions and conjectures entitled to more or less respectful consideration concerning influences which bear upon the physical well-being of the people.[1] They are discussed by the Committee with an ability and judgment which make the report a very interesting document,

[1] For my own part I do not care much for opinions on these matters and have no respect for "authorities"; what we want is facts. I gave my own opinion, such as it is, to the Committee with great reluctance and only on being pressed by the chairman; but I am not at all enamoured of it and am quite ready to change it on the production of better evidence.

though the deeper-lying difficulties attending the subject are evaded. The most striking and instructive feature of the inquiry is the large consensus of opinion elicited that the most injurious influences affecting the physical condition of the people arise from the habits of the people themselves. My own comparative studies have led me to the same conclusion.

They are chiefly concerned with England and Germany, for it is impossible to form a distinct impression of the physique of Americans when such a large proportion of those whom you see belong to other nationalities. In the Southern States I saw large numbers of true native Americans. Their physique is very poor and distinctly inferior to that of the coloured population. They are of good stature but weedy, hollow-chested, pallid and unmuscular. Elsewhere it is impossible to say what nationality any individual may belong to, until you ask. On several occasions I picked out a workman of fine physique and inquired; he always turned out to be English or Irish. I am therefore unable to compare the American people in regard to physique with the English and German, but those individuals whose nationality was known to me did not suggest any superiority. The great heat prevailing over the larger part of the States in summer is undoubtedly enervating: every one complains of lassitude and weariness in the hot weather. And it is hard to believe that the super-heated atmosphere generally maintained indoors throughout the winter and right into the spring is conducive to physical vigour. I notice that prematurely or morbidly blanched hair, which is common among cotton-spinners and others who live in a super-heated atmosphere, is very frequent in the States.

With regard to English and Germans, however, I have formed a very decided impression, to which I attach considerable importance. It is that while England produces individuals of superior physique the general level is distinctly higher in Germany. I speak of the "working-classes" or the mass of the people, not of those in a superior position. I have had the opportunity of closely observing a great many thousands in different localities; I have studied them individually at work and noted them collectively streaming out

of the factories and workshops on many occasions. I have not seen the Germans at play, because they do not play, but in England the football field affords an incomparable opportunity for seeing the men, and as the game does not interest me I have often spent the whole time studying the spectators. I do not find, as a matter of actual observation, that our factory population is so physically degraded as is often alleged or assumed. Both in the North and in the Midlands men of splendid physique are to be found in considerable numbers, particularly among those engaged in heavy work at the iron and steel furnaces and rolling mills. This is noticeably the case on the Tyne, where tall, big-boned powerful men are exceptionally numerous. A good many are from Ireland, and in similar works elsewhere—South Wales, for instance—I have found most of the men engaged in heavy work are from the north of England and Ireland. I have seen no men of equal physique in Germany. Neither, on the other hand, have I seen there the opposite type, which we have in England—miserable, undersized, wizened and deformed creatures, bearing all the marks of physical degradation. The general level is higher.

I attribute this difference to four causes: (1) The care of the children. They are not better cared for than the children of good parents in England, but the proportion of neglected children is very much smaller in Germany; neglect is there the exception, in England it is almost the rule. (2) The care of the home and the domestic habits of the women. They keep the home much better and spend the income to greater advantage. Nutrition depends quite as much upon the treatment of food as upon the money spent on it. The waste and misuse which mark the domestic economy of our urban population are almost unknown in Germany. (3) The comparative avoidance of injurious habits, which are the complement of good domestic ones. Women who find their interest and occupation in the home have no need to be always at the music hall and the public-house, sitting up late at night and keeping the children up and men whose homes are comfortable are content to stay there. (4) The military training which all the lads undergo on reaching the age of 20; the physical benefit they derive is more unequivocal than the mental and it lasts longer; it

is one of the most valuable educational influences they possess ; I refer to it again in the chapter on education. The effects are to be seen everywhere, and they strike every observer. Note the tramway men in Germany and their military air—smart, clean, stalwart and capable fellows. They wear a uniform, but the men in the factory in plain blouses have the same stamp.

The habits of the people! There lies the real reason why the German working-classes with lower wages, longer, hours and higher cost of living yet maintain a superior standard of physique. And for exactly the same reason the case is reversed in the classes above. Young men and women of the middle classes lead more wholesome lives in England than in Germany ; they are more active, more fond of the open air and of physical exertion, and they do not consume enormous quantities of beer. This habit is, I believe, responsible for the excessively large proportion of morbidly fat young men among the German middle classes. They work hard, they get up early in the morning—the business trains commonly run about seven A.M.—and they go on till late in the evening, but their leisure time is chiefly devoted to drinking beer, which is not a healthy habit when carried to excess.

CHAPTER XIII.

SOCIAL CONDITIONS.

Under this heading will be included a number of miscellaneous factors, of which the most important are games, theatres and other amusements, betting and gambling, drink, culture (books and newspapers), locomotion and other public conditions.

Games.

In the whole course of my inquiry I have met with no single factor which throws so much light on the subject of international distinctions as this. I said in the first chapter that in my opinion the English people still possess as much energy as formerly; but they direct it into different channels and make play their work. That applies to all classes of the community and it is a new thing. The English have always been distinguished as a people for exceptional love of games and sports. Hence the expression "merry England" which seems so curiously inappropriate to our dull skies; but those dull skies are the cause of it. People had to amuse themselves and make merry to escape the climatic depression, and at the same time the climate gave the physical energy which found a congenial outlet in the vigorous sports long peculiar to this land. Hence the evolution of the English games which are marked by being in the open air, more or less rough and violent, and popular in character, in striking distinction to the more elegant and aristocratic diversions preferred in France and to the indoor games, such as dominoes and cards, commonly played by the people in Continental Europe. But indulgence in those amusements used to be confined to high days and holidays; it was an occasional relaxation between periods of serious labour and was not thought of during the intervals.

In the last half century, however, and principally in the last quarter of a century a great change has taken place; what was an occasional relaxation has become a constant pre-occupation and the chief interest of life to a large proportion of men in all ranks of society. The great national games are football and cricket, but they are flanked by a host of others, including polo, golf, hockey, lawn tennis, croquet, bowls, which are appropriate to various seasons or classes or ages. Thus polo is for wealthy young men, hockey a winter game for the young and active, lawn tennis a summer game for the same, croquet and bowls for older and more sedate persons and there are many others less well known. Some are for one sex only, others for the sexes separate, others again for the sexes together. Golf stands alone in being an all-the-year-round game playable by both sexes, separately or together. The excessively rapid and extensive development of this game, borrowed from Scotland, in the last twenty years is one of the most striking evidences of the present intense devotion to games. Twenty-five years ago there were only two or three golf courses in England; now there are thousands. They have been put down everywhere throughout the length and breadth of the land and all round the sea-coast; no place is too remote, none too urban; London is encircled by a ring of them. This game is not popular: it is only played by the middle and upper classes and by professional players, but it is having a very decided influence upon the people as I shall presently show.

Football and cricket, however, are the staples; they divide the year unequally between them, the former lasting eight months from the beginning of September to the end of April. Football is the more popular of the two; beyond all others it is the game of the people, and its recent evolution is even more remarkable than that of golf, to which it forms the popular counterpart. No doubt the reasons why it has been adopted by the people in preference to any other are its cheapness and its spectacular character. It only requires a grass field and a ball, and a grass field is not dear in winter; the outfit and maintenance required for cricket are far more expensive. And spectacularly football presents some decided advantages; it has more life and

movement and the excitement of a match is compressed into an hour and a half instead of being expanded over two or three days.

Football is an old game, probably as old as any; but until the last twenty-five years or so it has been played in a casual way, one village challenging another to an annual match and playing according to local custom without any authoritative rules. The change it has undergone is not merely multiplication, but still more systematisation and commercialisation. This is the common fate of games. They begin as pastimes, played very much as the players choose; then rules are evolved and made more and more stringent and authoritative; the pastime is taken more and more seriously and eventually becomes a business. The evolution of football on these lines seems to have begun with the public schools,[1] whence it spread to the universities and to London and then to the provincial towns, which eventually became its chief strongholds, as increase of leisure and of means brought it within reach of the industrial classes. Clubs sprang up everywhere and multiplied with incredible rapidity. Some twenty years ago when the development was still in a comparatively early stage I counted one Saturday 150 matches, representing 300 clubs, in the neighbourhood of London alone; and about twelve years ago a newly-elected member of Parliament, whom I knew, said that the subscriptions which he was asked to give to football clubs in his constituency amounted to £1,500 a year. Such clubs play friendly matches every Saturday afternoon for six or eight months in the year, and even the most modest of these competitions are witnessed by several hundred spectators; the more important ones are witnessed by as many thousands. In all the larger industrial towns in the Midlands and the North games are played every Saturday during the season, at which from 10,000 to 20,000 spectators are present, consisting almost entirely of men and lads out of the factories, works and mines.

With the increase of competition and the development

[1] For the information of foreign readers I should explain that the term "public schools" in England is applied to the large private schools for boys belonging to the professional, wealthy and aristocratic classes. Eton, Harrow, Winchester and Rugby are the most famous of these institutions.

of organisation the pastime became systematised into a business. Local and central associations were formed, which offered honorary prizes to be played for during the winter, the competition being decided at the end of the season by the gradual elimination of beaten clubs. Two main varieties of football are played, having different rules and different methods of play, and each of these has its own associations and series of contests. One remains an amateur game, but the other has adopted a large professional element; and this is the game particularly affected by the industrial population. Keen competition among the larger and stronger clubs led to the engagement of players of exceptional ability, at first for small sums to cover the expenses incident to playing in different localities, but afterwards for regular salaries. These men are usually paid £4 a week for their services during the season and about half as much for a retaining fee during the summer. So great is the competition for their services that one club will pay £200 or £300 to another as a forfeit to procure the release from his engagement of a player whom they wish to secure. In 1895 the fees paid to professionals amounted to £3,500, in 1905 to £53,000. Most of the players come from the North and belong to the artisan or labouring class, but the game is too exacting to permit them to do any other work during the season. The matches for the important competitions are played on three days in the week, namely, Saturday, Monday and Wednesday or Thursday; but the men are submitted to a strict regimen the whole time under the supervision of a trainer. In the summer they can pursue some other calling and they generally carry on a business of some kind. This is necessary, as the football life is short and very few men are able to carry it on after thirty. Their salaries and other expenses are paid out of the "gate-money" or entrance fees to matches. In little local matches the entrance fee to the ground may be as low as 3d. or 2d., and in the most important ones it may be as high as 1s.; but as a rule it is 6d. Special seats under cover may cost anything from 1s. up to 5s. or even more. The following figures[1] show the number of

[1] *The Standard*, 6th March, 1905.

spectators and the money taken at four matches played on 4th March, 1905, in the third round of the Football Association Cup, the prize offered by the principal football organisation, and competed for by the best professional teams :—

At Bolton .	45,000 spectators	gate	£1,471
At Preston .	12,000 ,,	,,	625
At Everton.	45,000 ,,	,,	1,612
At Aston .	47,000 ,,	,,	1,634
	149,000		£5,342

The excitement at these games is indescribable. The spectators follow every movement with intense interest and an attention that never wavers for a moment, as the players sway swiftly and incessantly hither and thither over the ground. Every stroke is acclaimed with loud cries of approval, encouragement or scorn, which culminate in a roar of delight at some signal success or of rage at an adverse decision by the referee, who sometimes runs no little risk of personal violence at the hands of the excited crowd. On great days special trains are run which bring thousands of visitors to the spot, and notably the factory hands and miners from the Midlands and the North, who sometimes travel hundreds of miles to be present. The culminating matches of the season are the final contest for the cup and the international games played by teams representing England, Scotland, Ireland, and Wales.

Cricket is even more highly organised than football; its evolution is older and it supports a still more purely professional element, because it offers a more prolonged career. Being a less violent game it can be played in perfection to a later period of life, and after the age of match play there remain many years of professional activity in the capacity of umpire and teacher at the public schools, universities and elsewhere. Nothing perhaps indicates in a more striking manner the importance attached to these amusements in England and the serious attention paid to them than the fact that at all public schools (in the sense explained above) professional cricketers are numbered among the teaching staff at a regular salary, though their names do not appear on the list. Both masters and boys

in the mass pay more homage to proficiency in cricket than to any intellectual attainments, and the captain of the school on the cricket field is a greater personage than its captain in the class-room.

I have watched the development of this state of things for a good many years with some personal interest on account of my own experience. When I was at school it was beginning, but even then the supremacy of cricket clashed with other interests and pursuits. My school was at that time extraordinarily good at the game and performed some remarkable feats on the cricket field which heightened the standing enthusiasm. I was fond of games though never so proficient at them as some other boys, and I attained a moderate but respectable position in the second eleven, with prospects of advancement. I found, however, that one was expected to devote the whole of one's spare time to it; not merely to play on regular occasions but whenever there was half an hour between school and meals to run down to the ground and practise, and that every day. Having some other more serious interests to which I wished to devote a certain amount of spare time I rebelled against this appropriation of the whole of it and in the middle of the season ceased to play altogether, thereby incurring incredible odium. It is impossible for any boy to incur more unpopularity, except for some disgraceful act, than I did for putting my hand to the cricket bat and turning back. There were other boys who never played at all and excited no resentment on that account; their weakness was tolerated and over-looked. But giving the thing up was an unpardonable crime; that was high treason. A boy who could play cricket (though not very well) and did not devote all his energy to playing it better was a monster and a fool. Public opinion has advanced since then, and such a boy would probably be expelled from any self-respecting school to-day. I was recently reminded of the incident. I took a small boy to a preparatory school and the headmaster in showing me over the place pointed out some spot where the boys practised bowling and dropped some remark to the effect that it was "important" for them to learn to bowl in a certain way. I said nothing but wondered; for this schoolmaster—an old friend for

whom I have the greatest respect—is an exceptionally sensible man who makes his boys work and never was himself a great devotee of athletics. Yet so strong and general is the feeling about cricket in higher educational circles that even a man of this kind is swept away unconsciously in the current. I am all for games myself and would let boys and girls play to their heart's content, but to say that it is "important" for boys to learn to bowl in a particular way or even to learn at all seems to me only justifiable on the supposition that they are going to be professional cricketers.

Cricket, however, whatever its position in the world of means and leisure is not the game of the people that football is; nor does it excite the same interest. It is played by gentle and simple in innumerable local clubs, and contests between the counties for the "championship" correspond with the "cup" matches at football described above; but the game has not the same hold on the large urban populations. Important matches are attended by large crowds, but the numbers are not nearly so great as at the corresponding football matches. This minor degree of interest is due to the fact that it is more expensive both in time and money. The time is the weightier factor of the two, for full match play requires three whole consecutive days. The great mass of the urban population, therefore, can neither play much nor witness more than the tail end of a match on Saturday. Those who attend on other days are essentially loafers. To sit regularly all day watching other people do something, which provides a sufficient and continuous excitement, exactly suits the loafer; it is impossible, if not intolerable, to any one else save on particular occasions.

Golf, as I have already said, is still more confined to the upper classes; in fact, the mass of the people take no interest in it whatever, and that is equally true of polo, lawn-tennis, croquet and many other outdoor games. Nor do they play cards to any extent, but billiards and similar games are one of the chief attractions of working-men's clubs, which are very numerous and will be referred to below.

Allied to games are athletic sports, that is, competitions

in running, jumping and so forth, and in rowing, sculling, etc., on the water, held once a year for prizes. Innumerable clubs carry on these meetings all over the country, and they are the occasion of a good deal of betting, not so much as horse-racing, but more than football or cricket. Bicycling is becoming more and more popular among the lower classes with the fall in prices. These are the chief points to be noted about games in England. I shall discuss their bearing presently, after dealing with Germany and America.

In Germany a very different state of things prevails. Games are played by the upper classes, who show a growing taste for them. The national game is *Kegel*, a sort of skittles, but the English games and sports are being adopted. The Germans have long taken to rowing, and have attained considerable proficiency at it; bicycle clubs are very numerous and athletic competitions pretty common. Then there are cricket clubs, I believe, and certainly lawn-tennis and football clubs. But all these things do not concern the people, who do not play the games or go to the matches. I went to see a football match between Düsseldorf and a neighbouring manufacturing town. It took place on Sunday afternoon: the day was fine, and the ground very handy to both towns. A similar match anywhere in manufacturing England would have attracted from 10,000 to 20,000 sons of toil, who would have shouted themselves hoarse from beginning to end. At the German match, not one put in an appearance. When I left the field, towards the close of the game, the spectators, who had slowly increased during the afternoon, numbered exactly 65; they were not working men, and they showed no excitement whatever. I noticed a curious difference in the behaviour of spectators and players. In England, as I have said, the former keep up an almost continual noise, shouting at nearly every kick, and bursting into a roar at frequent intervals throughout the game; the players, on the contrary, maintain an almost unbroken silence. It was just the opposite in Germany: the spectators only raised a feeble sound when a goal was kicked, and for the rest were silent, but the players called out incessantly, directing, exhorting and reproaching each other. They played the Association game, not very well. The spectators, I take

it, did not understand the game, and only came out of curiosity. Their lack of interest and the total absence of the working-classes indicate precisely the difference between England and Germany in this matter. In the latter games may be ruled out as a factor in industrial life.

To two things, however, more attention is paid in Germany, and very good things too; they are gymnastics and swimming. Gymnastics are a national institution, and an element in the national education. So, too, is swimming to a considerable extent; recruits are taught to swim. The public municipal baths in German towns generally contain beautiful swimming baths and are decidedly superior in every respect to those in England or America.

In the United States games occupy a more prominent place in the national life than in Germany but very much less than in England. The national game is baseball, which may be said to do duty for football and cricket combined. Football is played, but only for a month or two in the year, and it does not excite any of the popular interest that makes it the most remarkable feature of modern industrial life in this country. Nor does baseball altogether replace it in this respect. The American game rather takes the place of cricket, which it resembles in many respects. That is to say it attracts great attention and important matches are witnessed by huge crowds of spectators; but they are rather cricket than football crowds. As a rule the working classes have no time to spare either for playing or for watching games, and the entrance fee, which is not less than 2s. for good matches, is too high for most of them. Probably when the Saturday half holiday becomes general they will go more often to matches, as the spirit of sport is hardly less strong than in England. Baseball is organised and professionalised as highly as cricket; leading players enjoy the same sort of reputation as great cricketers here; and the newsboys cry the results of the day's matches in the streets in exactly the same manner. Wherever two or three boys are gathered together in an open space they will be found diligently practising the game and imitating the dexterity of the heroes of the day. There is, therefore, no little resemblance, and it might be supposed by a casual observer that the American public takes these things very much as

the English public does. That, however, would be a mistake. The differences are real and important. There is not nearly so much play in America; the bulk of the male population is not all absorbed in it; business and professional men do not devote their time to it. Young men of the wealthiest classes are very keen about athletic pursuits, particularly at college; they have their competitions, and they play such games as golf and lawn-tennis with ardour. No doubt, also, the vogue of these amusements is increasing; but they are confined to the young and the leisured. Men who have entered on the serious business of life do not think of games, the mass of the people care a little, but not much more about them than they do in Germany, and nobody attaches serious importance to them. In England they are taken very seriously indeed. For instance, in a biographical notice of a man of some position in public life, published not long ago in a grave English journal, it was thought not inappropriate to devote some space to the deceased gentleman's style of playing golf and to the reason why he was less successful in that important avocation than he might have been. This illustrates the attitude, and it is in the attitude that the essential difference lies. The motive in games and other contests in America seems to be rather emulation than sport; the object is more to win and less to have a good game than in England.

Now open-air games and exercises are in themselves wholesome to body and mind; they provide a harmless and beneficial outlet for the physical energy which in the young absolutely requires an outlet, and at the same time they involve a good deal of sound discipline. Its influence is seen in the adoption of metaphors from games. Shirking or mean conduct is said to be "not playing the game" or "not cricket." They are less wholesome than real work in the open air such as gardening, field work and navvying and to my mind less satisfying; but these are too severe for the quite young and not obtainable in the towns. Games, on the other hand, are superior to gymnastics, not only because they are in the open air, an advantage of incalculable value, but also because they develop the body more freely and naturally, train the senses and the mind

to activity and involve co-ordination. They are a valuable factor in the national life—how valuable we should probably realise only if we lost them; and their diffusion among the people is a matter for congratulation not for regret. Even when carried to the point of professionalism they entail no necessary mischief. Many professional cricketers, footballers and golfers enjoy and deserve the personal respect of those who know them. The "flannelled fools at the wickets and the muddied oafs at the goals" might be worse occupied. And they might be in worse company. Drake is said to have composedly finished his game of bowls before taking the Spaniards in hand at the greatest crisis in the history of this country. If, instead of playing a game, he had been busy stringing turgid phrases into jingling rhymes he would have done his work no better and might have done it worse.

But playing is one thing and looking on, which is paying some one else to play, is another, and not by any means so wholesome. It is a form of loafing, and indulgence in it, as practised in England to-day, breeds loafers. Still we must not overrate the harm of looking on, and it is necessary to discriminate. The regular frequenter of the cricket field is essentially a loafer, as I have said; he may have a right to loaf, having done his work in life; but the cricket crowd is not composed of such. It always contains a lot of men of the sort that live upon their wives and relatives and never do a stroke of work. The cricket field is an irresistible attraction to them and a convenient excuse for doing nothing at all day after day. It provides company and conversation (for the loafer is a great talker) as well as excitement, and combines them with abundant opportunity of relieving the thirst with which he is generally afflicted I am not speaking of the keen cricketer; he wants to see cricket and could not sit out every match. The loafer does if he can raise the entrance fee, for he is no cricketer, though he knows more about the game than any cricketer that ever lived. I admit that the loafer might be worse occupied and often is; the cricket field is the most harmless place for him, but still it encourages him. The football field is different. The time of year often makes attendance highly uncomfortable, which does not suit the loafer. A good deal

of enthusiasm is required to induce any one to stand on the wet grass for an hour and a half on a raw winter's afternoon. I have watched the crowd very carefully and I cannot think that this ninety minutes discomfort once a week does them any harm at all. The young fellows would get more benefit from playing themselves, no doubt, but they cannot all have the opportunity, for football fields are a scarce commodity in large towns. I cannot, therefore, find any grounds for a railing accusation against football as such.

Golf, on the other hand, exercises a peculiar influence. It is breeding a race of loafers all over the country. Walking round the links is easier than work, and every lad tries to get taken on as a caddy wherever the game is played.

The real point, however, about these things in the light of international comparison is that they are taken more seriously in England than anywhere else; they absorb a much larger proportion of the attention, interest, energy and thought of the population in all classes. It is not that young mechanics and mill hands spend an hour and a half on Saturday watching a football match; it is that they think and talk football all the week. Similarly, but more so, with their employers; it is not that they spend the week end, which means both ends of the week, playing golf or something else, whatever it may be; it is that these things are their real interest and chief pre-occupation in life. Of course I do not assert this of every individual, though it probably applies in some measure to a majority. My point is that the elevation of games to a regular and serious pre-occupation among persons who are not idlers but who earn their living and carry on the business of the country is distinctive of this nation as contrasted with the others, with which I am comparing them. I shall return once more to it in the concluding chapter.

Theatres, etc.

Among the attractions of urban life the theatre takes a prominent place. I have mentioned it in my descriptive chapters and have given the number of theatres carried on in each of the selected towns, for which I could obtain the

information: these figures include music halls. The distinction has some importance in Germany, but very little in England or America, where the entertainment at the two places approximates more and more.

If these industrial centres are put together we get the following statistical result :—

Number of Theatres in Proportion to Population.

England	1 to 51,091 inhabitants.
U.S.A.	1 to 52,686 ,,
Germany. . . .	1 to 62,766 ,,

In individual towns the proportion may be very much higher. Thus in Oldham there is one theatre to 27,482 inhabitants, and in Fall River one to 26,750 ; and these are the two most purely industrial towns on the list. But the bare statistical comparison is a little misleading. Many of these theatres or music halls in America are exceedingly small, hardly more than booths or large rooms. If the number of seats were compared I have no doubt that the preponderance in favour of England would be considerably greater than that shown in the table. It would be still more so if a more general comparison were made ; for in England every little industrial town of 20,000 or 30,000 inhabitants, such as Bilston in the Black Country or Fenton in the Potteries, has its theatre, which is not the case in any other country. The proportion of actors and actresses to the population gives a better idea of the relative position :—

Proportion of Actors and Actresses to Population over Ten Years of Age.

England (1901)	1 to 2,028
U.S.A. (1900)	1 to 3,931

The German census does not distinguish actors and actresses; they are lumped with musicians and other performers.

The much higher proportion of the population living in towns in England accounts for some part of the great difference here shown, but it does not explain the fact that we maintain nearly twice as many of these professional entertainers in proportion to the population as the United States.

There has been a very large increase of recent years in both countries—in England, 70·6 per cent. between 1891 and 1901, and 173·5 per cent. between 1881 and 1901; U.S.A., 51·1 per cent. between 1890 and 1900, and 205·4 per cent. between 1880 and 1900.

It appears, therefore, that the most recent increase has been at a higher rate in England than even in America in spite of the more rapid rate of urbanisation, of increase of population and of industrial expansion in the latter country.

The figures given above relate only to actors and actresses, who form a definite heading in the censuses; but there are many other allied classes of entertainers, such as "showmen," "performers," and musicians, whom I have not attempted to compare statistically, because the designations are somewhat vague and may not have quite the same meaning in the different enumerations. It is clear, however, from the census figures that a similar disparity exists in these classes too. In Germany the increase of "actors, musicians, artists," etc., between 1882 and 1895 was 26·6 per cent.

There are other important differences to be noted. The theatre (including the music hall) is a much more popular institution in England than elsewhere, which is no doubt the real meaning of the numerical superiority; it caters for the people, and does so more and more. The common notion that the theatre is a place of entertainment for the wealthy or the socially superior classes does not apply to this country. Here the working-classes freely frequent all kinds of theatres and are the principal support of the majority of them. London, where the number of expensive theatres is very large, probably forms an exception, though even in London the chief increase in recent years has taken place in the outer areas, where the prices charged are much less than in the centre. But in the provincial towns the proportion of theatres to population is actually greater in industrial localities than in residential ones, where the population consists chiefly of the well-to-do. As instances I would mention Oldham, the Black Country towns and the Potteries. The prices are very low. Take these from one of the Wolverhampton theatres as an example: Centre circle, 1s. 6d.; stalls, 1s.; pit, 6d.; gallery,

4d. In the more ambitious theatres in the largest towns the prices are higher, up to 5s., but that is exceptional. The usual run of prices is from 4d. up to 2s. or 3s. That is at the theatre ; at the music hall they are less, being from 2d. to 1s. or 1s. 6d. And night after night the cheaper seats are filled with men and women, boys and girls, of the working-classes. On Saturdays the place is crammed with them from floor to ceiling; and at the music hall all the boys are smoking cigarettes.

Want of employment from bad trade or labour disputes appears to have very little effect on the theatre in these places. I remember on the occasion of a prolonged strike which paralysed the trade of a town of about 60,000 inhabitants, the two theatres it supports never flagged. There were relief funds, appeals for help throughout the country, free distribution of everything to help the starving people, and so on. In the middle of it a musical comedy company paid its third visit with the same piece, and made more money than on either previous occasion. In the winter of 1904-5, when the distress caused by want of employment at West Ham attracted so much attention, the local theatres were filled night after night chiefly by working-class audiences.

In Germany a very different state of things prevails. Excepting in the greatest cities, there is only one theatre proper to each town, and it is run by the municipality. It is hardly frequented at all by the working-classes. They do frequent the smaller music halls, but not in large numbers, and their patronage is almost confined to Sunday, when at least two performances are always given, in the afternoon and evening ; sometimes a third is given at 12 o'clock. The Sunday theatre performances are common to Protestant and Roman Catholic localities alike. Very few women belonging to the working-classes go, and, I think, no children. On the other hand, women of the bourgeois class frequent the superior music halls and the theatres in large numbers. Drink is always, and food generally, served in music halls at tables. Some of the newer halls are magnificent, far more spacious and comfortable than anything of the kind in England or America. For instance, one at Düsseldorf seats 4,000 persons or more, and

does it handsomely, with tables, ample elbow-room, wide spaces everywhere for walking and an excellent view of the stage from all parts. The prices are from 6d. to 3s. Places of this character are supported wholly by the bourgeoisie. The smaller halls frequented by working-men are of a very modest character, often no more than a large room, with a small stage, and the prices are correspondingly low, from 10 to 50 pfennigs. Altogether, the theatre plays a very small part in the lives of the German working-classes, though a larger one than games; and in all classes it plays a much smaller part in Germany than in England. Towns of 30,000 to 60,000 inhabitants, which always have one, if not two theatres, in England, have none in Germany.

Custom in America more resembles the English than the German model, save in one respect. I have seen no women at all in music halls and very few boys. The prices are higher; the lowest entrance-fee that I have met with was 5d., and that for small music halls in small places. The theatre closely resembles the English theatre, but it is not patronised to the same extent by the working-classes. In many trades and places the men have neither leisure nor energy to give to the theatre.

With regard to the performances given, the German municipal theatres stand apart; they have stock companies and very varied repertories, including serious opera of all nationalities, light opera, Shakespeare and other classical dramas, modern dramas, comedies, farces and genuine fairy-tale pantomimes. No piece is played twice running. They maintain a certain standard of art both in the choice and the performance of works. For instance, a new serious play of Hauptmann or Suderman will be mounted as soon as possible at every municipal theatre in the country. When I was engaged in my investigation "Monna Vanna" was being played twice a week or more in every large town I visited, and Madame Maeterlinck herself was touring in most of them. It is a tedious play, and I got tired of it very soon, but it is serious and up-to-date, and as such it was promptly added to every municipal repertory. The classical drama and operas, which are never heard in England—by Mozart, Weber and Schumann, for instance—are not allowed to fall into oblivion. An educational in-

fluence is maintained. The performances are generally of fair merit, if seldom very good. I believe these theatres do not pay. A statistician in Cologne, while I was in that neighbourhood, published the result of a calculation into the cost of the theatre there; he found that the municipality made a present of 10½d. on the average to every spectator at each performance.

The English and American theatrical repertories and companies are largely interchangeable and often interchanged. The only point I need mention as relevant to my subject is the melodrama and its gradual disappearance before the so-called musical comedy or comic opera. The melodrama is, I believe, peculiar to the British dominions and the United States; it used to be the one form of play which the working-classes cared to see, and it exercised a very strong influence over them. The theme is always the same, only the setting varies a little. It is always a tale of good oppressed by evil, but eventually triumphant, flavoured with stock domestic sentiment and artless humour, and worked out in a series of impossible incidents. To subtler minds it is false and ridiculous; but there is nothing false or ridiculous in the emotions which it excites and fosters. They are real, human and wholesome. It is a great school of ethics, broad, simple and intelligible, appealing to profound and primitive elements in human nature. Only the fool, wise in his own conceit, despises a thing which has power to sway multitudes. The melodrama is by no means dead, but it is continually dwindling before the rise of a kind of entertainment still more ridiculous and not at all wholesome. A musical comedy may be bright, witty and inoffensive; it has no ethical significance and is intended to have none, but it may pass an hour in a pleasant and even exhilarating manner, which has some value in a dull life. Unhappily, to produce a thing of this kind requires rare gifts, if not positive genius, and it is much easier to supply an imitation, which makes up for lack of wit or something to appeal to the mind by various devices for appealing to the body. The words are drivel and the music a feeble jingle, which has no more to do with music than the verses have to do with poetry. The substitution of this stuff for melodrama is not a change for the better. It appears to

be equally popular in England and America, and if there is any difference at all, it is that the pieces which emanate from America are a shade more dull and silly, with an indefinable touch of grossness.

As for the music-hall stage it is international and very much the same everywhere. In America a continuous performance after the fashion of the pantomime in England seems preferred to the programme of separate turns; but the difference is immaterial. A pleasant feature, which formed part of every programme I saw in America, was some extremely good male part-song singing. Both on the German and the American stage I have seen exhibitions of a coarseness that would, I think, be resented in England; but I am not well acquainted with our music-hall stage and may be mistaken.

The concert hall is allied to the theatre and must be briefly mentioned. Music is very popular in all three countries and plays a considerable part in the life of the people. Neither England nor America can pretend to compete with Germany in the production of good music, but curiously enough they appreciate and understand it quite as well, if not better. The number of persons who really understand music is very small in any country, too small to supply the newspapers with competent critics. In Germany the erroneous notion prevails that the nation is exceptionally musical, and any German feels entitled to attempt to perform any music. The consequence is that you hear the finest music murdered with calm self-satisfaction. Choral music is best performed in England; I have mentioned the choral societies in the manufacturing towns as a striking feature of industrial life.[1] In America cultivated amateurs understand music exceedingly well, and I have just mentioned the very refined part-singing to be heard at music halls, but good voices are too rare to produce good choral singing; even the boys' voices are so harsh that they cannot be used for church choirs, and the detestable practice, of leaving the musical part of the service to a paid mixed quartette prevails. Until recently orchestral music was

[1] The superiority of the north-country choirs, which is a commonplace of observation, reflects a general superiority. They sing, as they do everything else, with more vigour.

much more appreciated in Germany than elsewhere, but of late years it has been largely popularised in England and America. The municipal orchestras in Germany, like the municipal theatres, have a certain educative influence, which cannot be attributed to brass bands playing in the parks. On the whole I should say that there is a great deal more music, public and private, good, bad and indifferent, in England than elsewhere. Instruments in workmen's homes are common, and two servants I recently had, who came out of a poverty stricken household, not only rode the bicycle, but played the mandoline. The most prevalent kind of music, however, is the worst; the more successful music-hall tunes are promptly in the mouths of all the children even in remote villages. This seems to be the chief result of the efforts to teach singing in elementary schools.

Betting and Gambling.

Whatever may be said in favour of games and theatres it is difficult to find much merit in betting and gambling, in which England is equally pre-eminent. The spread of betting among the people in recent years is, indeed, even more striking than the growth of games and theatres. A few years ago I made an inquiry into the subject and found that the practice of regularly betting on horse-races was mainly confined to some half-dozen centres, and that elsewhere bookmakers only paid occasional visits when races were held in the neighbourhood. Now the business is carried on everywhere nearly all the year round. It has pervaded the entire population. I live in a village where there is no one to do business with but farmers, very small tradesmen and labourers; yet it is worth the while of a bookmaker to drive in several days a week from a neighbouring small town. He does business not only with men, but with women and children. And everywhere I go I am told that the same thing is going on. In 1905 there were 134 flat-race meetings representing 279 days' racing, and 170 steeple-chase meetings in addition.

The census does not take account of bookmakers; presumably they put themselves down as "financial agents"

or something of that sort; but it is quite certain that they are a very numerous body and that they live well. We maintain, at any rate, several thousands of them in affluence.[1] When I say we I mean the backers of horses in this country. Personally I do not back horses, for it would give me no satisfaction whatever to maintain a bookmaker, which I should inevitably help to do if I betted with him. This is so obvious that it at once gives a clue to the class of persons who do back horses. A few bet for sport; they like horses and "back their fancy" for a wager; in other words they buy excitement. It is not a form of excitement which appeals to me, but I am no bigot on the subject and do not presume to dictate to other people how they should spend their money and what pleasures they should or should not buy. The great mass, however, bet for gain; their object is not to buy anything but to make money, though incidentally some excitement is involved. Most of them have never seen a race or even a race-horse; they know and care nothing about it. But they think they see a way to get something for nothing. It is a base and ignoble aim, and the only thing to be said for their position is that it is more demoralising to succeed than to fail. The one who succeeds is the bookmaker; he must succeed or quit the business. It follows that they are foolish and ignorant persons led by a base motive into losing money which they cannot afford. They are in all classes of life, but the great spread of betting is among persons of small means—artisans, factory hands, labourers, small shop-keepers and clerks.[2] Those in a superior social position gamble in other ways, in which there is more chance of winning, as in the money market, or more pure distraction, as at cards. These things are important, too, especially the latter, which occupies an enormous amount of time and attention among the professional and business classes. Among the lower classes gambling, as distin-

[1] The National Anti-Gambling League reckons the number at 20,000.

[2] An accountant, writing to *The Daily News* on 8th December, 1903, stated that he had recently had to examine and audit the books of a ready money bookmaker. In the previous October the man had received 815 telegrams investing sums from 5s. to £20 and 18,768 slips dealing with sums from 1s. to £1. One of his agents working Smithfield and Covent Garden Markets took 467 papers in a day.

guished from betting, is carried on chiefly by foreigners and is almost confined to London. For my comparative purposes the great salient fact is the practice of betting among the people in this country.

I am not concerned to dwell on the misery and crime which spring from it, though I am well aware how great they are and am not disposed to minimise them.[1] My particular point, as I have explained above, is the absorption of energy. Whatever interest and attention are left over from games and theatres are devoted to betting, and it has a much more injurious influence upon industrial efficiency than they, because the delusive prospect of making money without earning it, which is kept in view by occasional wins, gradually destroys all taste and capacity for work. It springs from a base and debasing motive. And the practice continually increases; all efforts to counteract it are futile. Suppressed in one direction it breaks out in another;[2] its variations and ramifications are infinite; it is carried on in the street, the public-house, the club and the shop. It has extended from men to women and from women to children; from large to small towns and from towns to villages. Women have taken to bookmaking. I have only mentioned horse-racing because that is the main field, but to it athletic sports have been added with the usual corrupting effect, and now football is coming into play. It may seem difficult to "make a book" on the results of a football match, but the ingenuity of the betting ring has been equal to the problem. The idea has been borrowed from a practice invented by an inferior class of newspapers, which offer prizes for forecasts of results of matches. This practice, carried out by means of coupons in a variety of ways, has greatly fostered the passion of gambling among young men and boys. It has been adapted to betting in the following manner: The bookmaker takes

[1] For details I would refer the reader to *The Bulletin*, published by the National Anti-Gambling League, and to *Betting and Gambling*, edited by B. Seebohm Rowntree (Macmillan).

[2] Attempts at suppression result, as compulsory interference with popular habits is liable to result, in corruption of the executive. An ex-bookmaker, who plied his trade in a London district informed me that the superintendent of police in that division always let him know when the plain clothes' officers were to be put on to watch him.

a certain number of matches to be played on a given date and offers odds against correct forecasts on an elaborate system of combinations, made up from the three possible results: (1) won by home team, (2) by visiting team, (3) drawn, in so many games. There are also odds against naming the top score or any correct score and so on. It is much more elaborate than betting on a horse-race and rather resembles the intricacies of roulette.

Cricket, I understand, has not yet been pressed into the service, and that is fortunate for the game, for as soon as any sport becomes the subject of professional wagering corruption follows and the sport—which implies a genuine competition of some kind—disappears.

In Germany there is horse-racing, but it is as yet comparatively trifling and it does not affect the mass of the people. The lottery is the recognised and authorised safety-valve for the gambling passion. All the efforts of reformers have failed to abolish it or even to keep it down, but in Prussia at least some success has been attained in so arranging it that it shall be as little seductive as possible to the poorer classes. The system is that of the "class lottery," in which the number of chances is too small and the price too high (£7 4s. to £12 10s.) to permit of any general participation by the lower sections of the population. The traffic in small fractional chances, which used to be carried on by speculators, the enticing advertisements and other means of exciting the gambling instinct have been prohibited. In effect the whole thing has been brought down to a State tax on a middle-class luxury. Other States are less austere than Prussia, and their lotteries consequently have a wide circulation beyond their own borders. But the system is the same in its main features, and I think it may be concluded that, though lotteries have much increased in recent years, they touch the labouring-classes but little. Sometimes a number of men club together and buy a tenth, but the drain on their pockets is small. Compared with betting in England the lottery is a trifling factor in industrial life.

In America there is a great deal of betting and gambling. The most gambling card games are American, and one of them has the characteristic peculiarity that success

depends on the skill of a player in imposing on his opponent or "bluffing" him. Among business men, however, the passion takes effect chiefly in business, and the line which divides it from enterprise is sometimes ill to define. With regard to the working-classes I have taken the opinion of English workmen in several centres and they all expressed the same opinion that though there is some betting it is not carried on to anything like the same extent as in England. It is certainly much less obtrusive, but it appears to be increasing and to be sufficiently developed to have attracted public attention. Some attempt has been made to limit the telegraphic traffic.

Drink.

Drink has a more important bearing on the general well-being of a community than on industrial efficiency. That is to say, a man cannot be a hard drinker without seriously affecting his home, but he may still be an excellent workman; indeed some of the most skilful workmen are notoriously among the hardest drinkers. *Cæteris paribus* they would doubtless be still better workmen if they were steady, but the *cætera* are very seldom *paria*. When English mechanics were more skilful than they are now, according to the testimony of manufacturers, managers and old workmen,[1] they also drank a great deal harder. They were not good workmen because they drank, but because they were apprenticed to the trade and took a pride in the work, having nothing else to take an interest in; and drink did not prevent them from being good workmen. I therefore do not consider that this factor possesses so much industrial importance as the three previous ones discussed in the present chapter, though its social importance is equally great and its physical importance much greater. It is also of less comparative value, because there is less difference between the three countries in regard to drink.

All three are drinking countries. I have a quantity of material for making a statistical comparison in three directions: (1) consumption of drink; (2) number of public-houses; (3) amount of public drunkenness; but all these

[1] See p. 121.

data are open to certain objections. Their correct interpretation requires a great deal of qualifying knowledge, and I cannot spare the space to discuss them thoroughly. I will, therefore, confine myself to some summary observations based partly on statistics and partly on study from the life, with such details as seem desirable to illustrate them.

I put aside the consumption of drink per head of population because nothing is more misleading in making international comparisons, though it is valuable in comparing different periods in the same country. Suffice it to say that in all three countries much strong drink is consumed.

The number of public-houses to population is greatest in Germany, and regulation by law or authority is least severe. The numbers are given for my selected towns in the descriptive chapters in Vol. I. In working-class quarters bars are often very thick on the ground, and in the principal streets the same may be said of restaurants and cafés. They are licensed by the local authority, which has power to refuse applications, but rarely does so to persons of respectable character. There are no statutory hours of closing, and the law distinguishes between public-houses and superior establishments, where liquor is sold. The former generally close at 10 or 11 P.M., whereas superior places are often open till 2 or 3 A.M., and some cafés never close at all.

I attribute this comparatively easy-going state of things to the fact that national intemperance has not hitherto engaged public attention to the same extent as in England and America, although "alcoholismus" is now taking its place among the innumerable other ismuses as a subject for learned pamphleteers.

In America licensed houses are generally less numerous in proportion to population than in Germany or England, but there are exceptions. Regulation by law is also more strict, though this varies greatly in different States. The number of licensed houses, however, bears no necessary relation, as it does in Germany and England, to the number of places where liquor is sold; and in this as in other matters the law bears no necessary relation to the practice. Evasion of the law and illicit traffic have been described by

so many writers,[1] that no evidence is needed to prove their prevalence; but a little experience of my own may be interesting. It was in Columbia, the capital of South Carolina, where the law is of a restrictive but not severely repressive character. No public-houses, inns, or restaurants are licensed for alcoholic liquor, which can only be sold in special shops. This method has been commended as one of the most successful experiments in the States, and I believe it is so. It was a Sunday and having had nothing to drink but very bad coffee for several days I asked for some wine at the hotel, which was the best establishment in the town and carefully conducted. They could give me nothing as the liquor shops are closed on Sunday. "But," said the manager, "there are plenty of 'blind tigers' down the street." "What is that?" said I. He explained that it meant a restaurant where liquor was illicitly sold and said I should find one a few yards down the street. I did. There I ordered a meal and asked for something to drink; they offered me beer or spirits. I chose beer, and they began to lay the meal in the back part of the premises. There were too many flies there for me, and I asked them to put me near the door. "Well," said the man, "you won't mind drinking the beer out of a cup will you?" "Not in the least, you can bring it in a tea-pot if you like." That is just what he did, and I sat right in the window and had my meal. At the further end of the premises was a regular bar. There were several similar places in the same street. Next day I called on the Secretary of State at the Capitol and spoke of the blind tigers among other things. He assumed an air of ingenuous surprise and was gently suggesting that I must be mistaken, as they had no such thing in the town, when a gentleman sitting at another table in the same room broke in with "Why, the place bristles with them". The Secretary was fairly caught and we all burst out laughing.

Besides blind tigers there are "speak-easies," "kettle-rushing," and other mysterious euphemisms for illicit traffic, which appears to prevail even in towns of moderate size

[1] A comprehensive examination of the law and practice in several States is contained in the *Temperance Problem*, by J. Rowntree and A Sherwell.

under even moderately restrictive laws. The population of Columbia is only 21,000 and, as I have said, the laws in that State are among the less severe.

England comes between Germany and the United States in regard to the number of licensed houses, the severity and the observance of the law. There has been a great diminution in the proportion of public-houses to population since 1869 and at the same time restrictive legislation has been strengthened. But a set off in the form of clubs must be taken into account; and I will take this opportunity to say what I have to say about clubs.

Working-men's clubs have increased very rapidly in recent years and they now form an important factor in the life of the people. They are places of amusement and recreation and constitute one more item of differentiation in that category between the working-classes of England and those of other countries. Clubs and social societies are very numerous both in Germany and in America. I took the following figures from the Chemnitz directory :—

More or less social	97
Dramatic	11
Kegel	28
Smoking	7
Rifle	9
Total	152

There were 14 cycle clubs, 6 riding, 9 gymnastic, 2 swimming, 4 athletic, 1 fencing, 1 hunting, 1 lawn-tennis. The club is, therefore, a well-developed institution in Germany; so also in America, particularly in the form of those societies with romantic names which I have already mentioned. In the town of Lowell, for instance, there are 53 societies of one kind or another. But the social club of the English type is almost confined to the wealthier classes. Working-men's clubs, like those which are so numerous in England, are few in America and fewer still in Germany. A great many of them are nominally political, but their utility is almost wholly social. The members play billiards or cards, read the newspapers, smoke and drink. They are alternatives to the public-house, and have had so much to do with drunkenness that some check has recently been imposed by law; they must all be registered and are under

police surveillance to a certain extent: but the law is quite inadequate. If clubs are added to public-houses the urban facilities for drinking in England exceed those of Germany.

This brings me to the question of drunkenness. There is a great deal in all three countries. I have given the police figures for the English and American towns on my list; in Prussia drunkenness does not appear as a separate heading in the returns; it is included under "disorderly conduct". But even if parallel statistics were available it would be misleading to contrast them as they stand, as in the case of consumption per head. I beg, however, to call the reader's attention to the very high figures in American towns because we are constantly having held up to us American sobriety as an example. Taken by themselves and without any comparison the returns conclusively prove the existence of an enormous amount of public drunkenness.[1] The belief in American sobriety appears to be due to a superficial observation of the habits of well-to-do society at table, where iced water is the staple drink and intoxicants are exceptional. The taste for iced water, by-the-by, which is the subject of some ridicule in Europe, is easily understood and rapidly acquired in the States; in a short time it becomes a craving. I have felt it myself so strongly that I have gone to the tap in the cars, although I have seen the lumps of ice put in by attendants with filthy hands. But the custom at meals is deceptive, as anyone may convince himself who takes the trouble to visit the bar before and after or at any time between meals. The most noticeable point about drinking in America is the consumption of spirits, particularly whisky, and of various noxious compounds between meals. Of course the foreign, and especially the British, element must not be forgotten. It is undoubtedly responsible for a large share of the public drunkenness, particularly among women. I have some full details for the town of Fall River where the foreign element is exceptionally large. The total number of arrests (1901) was 2,250 or 20·9 per 1000 of the population, a higher proportion than in the most drunken town in England (Newcastle); 1,846 were males, and 404 females; 62·18

[1] Those who wish for more comprehensive details are referred to the "Statistics of Cities," *Bulletin of the Labour Department*, No. 42.

per cent. were of foreign birth and they came in this order: English 435, Irish 429, Canadians 350; the other nationalities were insignificant. There were, however, 851 natives, of whom 134 were women, and no single foreign nationality contributed so many women, though the English came close with 106 and the British together (excluding Canadian), far exceeded them. Now the foreign element is 47 per cent. of the whole population, and therefore its share of drunkenness much exceeds its proper numerical proportion, but if the differences in age—constitution and social circumstances be taken into account, the foreign element being mainly factory hands and young to middle-aged adults, the discrepancy must be largely discounted; and it appears that the natives are not much less drunken, class for class, than the foreign immigrants. They are, however, much less drunken than the British immigrants taken alone. But the fact that 134 native women in a population of 54,000 (native) were arrested for drunkenness is to be noted.

I believe the facts here presented concerning the two nationalities under the same law and police procedure in this typical industrial town, represent pretty fairly their relative position in regard to drunkenness; it agrees with what English workmen in the States tell me. There is a great deal of drunkenness there, but not so much as at home, and the industrial classes do not spend anything like so large a proportion of their income on drink as ours.

That is still more true of Germany, though they are troubled with many habitual inebriates in Prussia and North Germany generally; their appearance is unmistakable, and, as luck would have it, I saw a good many of them. I had not been in Crefeld more than ten minutes when I saw three men come staggering down the main street. I turned to watch what the policeman standing at the crossing, to whom I had been talking, would do. When they got there he was carefully looking in another direction. Thus is human nature ever the same, even in a Prussian policeman. It was Monday and the forenoon: "blue Monday" is a recognised institution in Prussia. The drunkards are drinkers of schnapps, which is plain, rectified spirit identical with Swedish brannvin and what is called whisky in English public-houses. At Solingen I had a

similar experience, and at Aachen the first man I spoke to outside the station was a chronic drunkard reeking of schnapps. At Düsseldorf I frequently went into the old quarter of the town, which was near my hotel, and seldom without seeing one or two men intoxicated. But too much stress must not be laid on such chance encounters. These towns contain many Poles who have migrated in search of work. The Slavs are spirit drinkers, and the men I saw might have been of this race; they generally had a dilapidated appearance which I have never seen among regular German workmen, who manage to maintain a remarkably high standard in this respect, even when in misfortune. It is probable that higher wages and increased prosperity in recent years have been accompanied by increased expenditure on drink; but the broad conclusion I draw from such evidence as I have been able to gather is that this item is not as yet a heavy charge on the pockets of the industrial class at large. In Saxony the great bulk of the men are certainly frugal and abstemious, judged by the English standard. The women do not frequent public-houses, and do not take drink even when offered them; it is considered bad form. This fact has much influence on the habits of the men. I am satisfied that, as a body, German workmen drink very much less than our own; the married men cannot afford it, and so set the younger ones a better example.

The case is otherwise with the middle classes, which in Germany consume astonishing quantities of beer and wine. According to the official returns the consumption per head of beer is a few gallons more in England than in the German Empire—about 30 to 27—though the figure for Bavaria alone rises to about 50; but there is a great difference in the manner of it. In England the consumers of beer are the working-classes, in Germany the middle classes; I do not mean exclusively, of course, but mainly. The custom of sitting for hours in the Bier-halle, which is all-prevalent among the German middle classes, and shared by the ladies and often the children of the family, is unknown in corresponding sections of society in England. It is responsible for a great consumption of beer, but this drinking rarely proceeds as far as intoxication. Whether

it is very healthy is another question, and I have already hinted at its effects in producing excessive fat in young men. I found to my surprise that England has recently acquired a reputation in Germany to which it is hardly entitled, whether for good or ill. We are all supposed to be teetotallers, and gentlemen whom I met were surprised when I joined them in a glass of wine or beer. I imagine that this notion must have arisen from the efforts of some ardent propagandists who hold up the example of England to their countrymen very much as the example of America is held up to us. It is about equally true that the English drink no beer and the Americans nothing but iced water.

With regard to drinking in England I have indicated the comparative position and need say little more about this well-worn theme. The only point of interest that I have encountered in my investigation is the evidence that, however great the disorder and misery now caused by drink, it is far less than it was fifty or sixty years ago. I have elsewhere proved that drunkenness has greatly diminished,[1] and that fact is now generally accepted, but I met with a good deal of interesting personal testimony to the same effect. All the old men whom I asked in the industrial centres told much the same story. One manufacturer in a Midland town, whose recollection covered sixty years, gave me a most vivid description of what used to take place when he was a boy. He said that the factories never opened on Monday at all, and very few men turned up on Tuesday; it was not till Thursday that they were in full swing. In order to make up for time thus lost and to earn the money they required, the men used to work all through Friday night and Saturday, and there was the greatest difficulty in getting them to quit work and be paid off by midnight on Saturday. On Sunday morning, when he used to go to church as a schoolboy, the men were lying about the streets drunk to insensibility. The masters and the men used often to drink together. His account of Sunday morning exactly agrees with the evidence given before the Select Committee in 1834 upon the state of things in London.[2] He said: "People talk about

[1] *Drink, Temperance and Legislation* (Longmans, 1902).
[2] See *Drink, Temperance and Legislation*, p. 37.

drunkenness now, but there is no comparison at all: it is ridiculous". Nor did I meet with any other opinion; all the employers, managers and workmen whose recollections went back for forty or fifty years, said that the men are far more regular now, but that nevertheless they are not such good mechanics as they were.

Culture.

Public Libraries are widely diffused in all three countries, but the use made of them differs considerably. A notion prevails in England that we are very much behindhand in the provision of facilities for free reading, but it is not borne out by investigation. This appears to be one of the many subjects in which the national habit of self-depreciation is encouraged by the practice of travellers in extolling something they have seen abroad in some particular place without inquiring whether it is exceptional or not, and in contrasting it with the conditions at home without ascertaining what those conditions are. No doubt that sort of comparison has a stimulating influence, but it may fall very wide of the truth.

In comparing by personal investigation a series of towns as nearly alike as possible, I have found that the facilities in England are on the whole decidedly superior, and such comprehensive statistics as I have been able to obtain do not contradict that particular experience. Free libraries are quite as general in our industrial towns as in those of America, and if some contain fewer books and have fewer readers in proportion to population, others have more. None of our provincial towns equals Boston with its 812,000 volumes to about half a million inhabitants, but neither does any industrial town in America equal Bolton with its 120,000 volumes and half-million circulation to a population of 170,000. Sheffield, though somewhat larger, is fairly comparable with Pittsburg in size and character; the number of volumes (1901) is very much the same, namely, Sheffield, 130,000; Pittsburg, 140,000; but in the number used Pittsburg has a great superiority—Sheffield, 540,000; Pittsburg, 950,000. On the other hand, if we compare Bradford with Newark, N.J., which has, as nearly as possible, the same population, we get the following:—

Town.	No. of Volumes.	No. Issued.
Bradford	115,000	661,074
Newark, N.J. . . .	79,000	314,874

Some comparative figures for other great towns are given below, showing a marked superiority for England. If, however, a large number of towns be taken, the circulation in proportion to population is perhaps greater on the whole in America; but in order to estimate the value of these statistics it would be necessary to know not only the classes of books issued but also the classes of readers. On the first point there is some information, on the second very little. Fiction forms by far the largest section of the issues in both countries, but whereas it represents about 50 per cent. or a little more in the English libraries (including the issues of the reference department), in America the proportion is over 77 per cent. in the only cases for which I could secure the information. The intellectual influence of novels is a question on which opinion differs, but here again closer discrimination is necessary; there is fiction and fiction, and to form a judgment one ought to know what authors are most read. Broadly, however, I suppose it may be said that for grown men whose minds are formed and who are brought constantly in touch with the realities of life, fiction is a harmless and refreshing relaxation, but for the young, especially girls, and for women absorption in novels is like a diet of sweets; it enervates and upsets the digestive apparatus and destroys the appetite for strengthening food. Unlimited indulgence has a most pernicious influence, and it is precisely this which swells the returns of circulation. There is the less need for providing facilities for a gratuitous debauch because nearly all the best fiction can now be bought everywhere for a few pence the volume, which all those who want to read at all can afford. And buying entails certain advantages; it restricts the number and enforces selection; and books bought are valued, read and re-read, as books worth anything at all ought to be.

With regard to the readers, some interesting figures are published for the Bolton library, which issues the most complete report that I have met with. In 1901 the number of volumes used in the reference department was 24,160, and the classes of readers were as follows:—

	Number of Volumes.
Pupils and teachers	8,670
Artisans, etc.	7,479
Cotton operatives, bleachers, etc.	4,284
Clergy, etc.	2,702
Clerks, etc.	681
Shop assistants	156
Warehousemen	121
Shopkeepers	67

I have no corresponding figures for any American library, but will give some presently for Germany.

Now in this list the working-classes make a very good showing, and when the kinds of literature are also analysed by classes of readers, they come out even better. The two principal headings are "novels and romances" (presumably of the better kind) and "general literature" (not including poetry or travels), and almost the whole strength of the "pupils and teachers" is expended on these two. But the "artisans" have a different record; they head the list of readers in "sciences and the arts" with 878, in biography with 212, in history with 244, in philosophy with 29, in "poetry and the drama" with 115, in "voyages and travels" with 84; and they are only second to the "clergy, etc." in "law, politics and commerce" (384) and "theology" (83). The clerks are also serious readers with a good record in "law, politics and commerce," "sciences and the arts" and history. The cotton operatives, on the other hand, devote but little attention to the heavy subjects, and are almost equally divided, like the pupils and teachers, between novels and general literature. In both these classes there is no doubt a large feminine element, in contradistinction to the artisans, clerks and clergy; the last use the library almost exclusively for serious literature.

The most marked points of distinction between the English and American public libraries is the much more frequent provision of branch libraries and of newspaper-rooms in the former. Juvenile departments form a feature of both. In some newspaper-rooms in England it has been found necessary to black out the betting news.

Turning now to Germany, we find considerable differences. Municipal libraries are less numerous, generally smaller and much less used than in England or in America, but they exist in most of the larger industrial towns. The

following details of some selected cases may be of interest to librarians and others. Düsseldorf has three municipal libraries and one reading-room. In 1901-2 the three libraries contained 9,840 volumes, and lent out 86,291 to 5,671 readers. Of the total number of readers, 1,975, or considerably more than one-third, were labourers, factory hands and artisans, and 1,935, or another third, were women. Of the lendings, 80 per cent. were of "schöne Literatur" which includes poetry, essays and fiction. The reading-room was used by 33,080 persons, of whom 30,787 were males—an average of 98 per diem. This reading-room is provided with six daily papers, a new and unusual departure. As a rule, German free libraries do not keep newspapers, which perhaps accounts for the very large number of journals published in these towns. Aachen has one municipal library and a reading-room. The number of volumes in the library is about 90,000, and in 1900-1 6,795 were lent to 4,317 readers, of whom the immense majority belonged to the cultivated classes. Only 62 workmen are put down on the list of readers; the rest were professional men, teachers, students, merchants and so on. The reading-room was used on 271 days by 4,307 persons, or 16 persons a day; they consulted about 6,500 volumes. Chemnitz has one municipal library and a reading-room. The number of volumes in the library is about 32,000, and in 1901 7,517 were borrowed by 857 readers, consisting almost entirely of professional men, students and teachers. The reading-room was used by 5,482 persons. Crefeld has one municipal library and reading-room; but apparently books are not lent out at all. The annual report makes no mention of them. The reading-room was in 1901 used by 5,315 persons, among whom were 715 artisans and superior factory workmen; the rest were chiefly students, teachers and merchants. Barmen has one municipal library and reading-room with about 17,000 volumes, of which 7,718 were lent out, while about 4,000 persons used the reading-room.

These figures will seem very small after those given above for English and American towns; but it is to be observed that, in addition to the regular municipal libraries, many German towns have also *Volks-bibliotheken* or people's libraries, in-

tended more particularly for the working-classes. Some of these are maintained by the municipality, others by church societies, others by library or benevolent associations and by various means, including State assistance in some instances. They correspond to the English and American free libraries more nearly than do the municipal libraries proper, which are generally intended for learned purposes only. Hamburg, for instance, has a magnificent town library, which contains over 600,000 volumes, and runs Boston pretty close, but it only issued 9,600 volumes in 1900. An institution such as this corresponds rather with the Bodleian at Oxford than with the public libraries we have been discussing.

Of *Volks-bibliotheken* Berlin has 27; Dresden, 14; Leipzig, 13; Bremen, 15; Hanover, 13, and so on. Two of the Düsseldorf libraries mentioned above are of this character. But even with these the number of volumes issued is comparatively small, as the following comparison will show (see page 295).

London and New York are omitted because they can only be compared with each other and no comprehensive figures for London are available. Some of the German returns are undoubtedly incomplete, and the statistics must be taken as a whole with a liberal margin for differences in the method of compilation. Still, they are not uninstructive as they stand. They effectually dispose of the supposed inferiority of England in regard to facilities and the use made of them. Manchester is easily first of all these great towns. The circulation of its public libraries is almost equal to that of Chicago with thrice the population: and the six English towns together are far ahead of the six American ones.

It must not be inferred, however, that culture by reading is less diffused among the German people. I believe the contrary to be the case. The fact that the circulation of public libraries is smaller in Germany than in England or America is due to several causes; one is that the reading

CIRCULATION OF PUBLIC LIBRARIES.

Town.	Population.	No. of Volumes Issued.
GERMANY (1901).		
Berlin	1,913,528	727,295
Hamburg	715,093	87,909
Munich	510,044	198,616
Leipzig	462,675	44,061
Breslau	427,833	300,524
Dresden	404,773	191,067
ENGLAND (1901).		
Liverpool	684,958	2,052,896 (1903)
Manchester	543,872	2,295,293
Birmingham	522,204	1,332,315
Leeds	428,968	988,710
Sheffield	380,793	540,000
Bradford	279,767	661,074
U.S.A. (1902).		
Chicago	1,800,000	2,372,741
Philadelphia	1,335,000	1,915,687[1]
St. Louis	598,000	987,264
Boston	573,579	1,890,106
Baltimore	518,000	755,774
Cleveland	390,000	809,515[1]

is more generally of a serious character; another is that the working-classes are better supplied with books in other ways; they have more at home and works or factories more often have libraries attached to them. A notable case is Krupp's at Essen, and with a few details about it I must close this subject. The library was only opened in 1899, but by March, 1902, it already contained 29,000 volumes and the total lendings for the previous twelve months amounted to 208,793. The classification of books borrowed shows that 52·9 per cent. belonged to the "schöne

[1] Number used in reading-rooms not given.

Literatur," 27·5 to books for children, 2·5 to geography and travels, 2·44 to history, 2·03 to trade and industry; the sections least in demand were law and politics, literary criticism, philosophy and biography. The ten most popular authors among readers of the working-class came in the following order: Schiller, Lessing, Kleist, Hans Hoffmann, Gotthelf, Dickens, E. T. A. Hoffmann, Scott, Goethe and Anzengruber, surely a very creditable list. Translations from the classics were in steady demand. The number of readers was about one-third of those employed at the works —79 per cent. were workmen and 21 per cent. officials. The library is administered with extreme care and much ingenuity in practical details. The system is well worth the attention of public librarians.

The list of the most popular authors just given shows that "schöne Literatur," by no means corresponds with the current fiction, which accounts for the great bulk of the books issued by the English and American free libraries. Schiller and Lessing are a little above Miss A. and Mr. B., with all due deference to the commanding genius of those popular writers; and the facts disclosed support the suggestion that one reason for the comparative smallness of the German free libraries is that they are more select. That, I consider, is to their advantage. The public library, as a storehouse of knowledge and culture, maintained for and by the people, is a fine, self-helpful and elevating influence; as a millionaire-made machine for glorifying the millionaire and providing the wives and daughters of artisans and shopkeepers with novels which they can afford to buy and are better without, it is a mischievous sham and a public curse.

Newspapers are a very important factor in the life of the people, but they need not detain us long. The most marked difference between the three countries is the very much larger number of papers published in German and American towns than in English ones. I have given the numbers for my selected towns among the statistics, and a single comparison which is fairly representative must here suffice:—

Town.	Population.	Daily and Weekly Newspapers.
Sheffield	382,334	12
Essen	183,500	22
Pittsburg	333,500	59

The large number in American towns is to some extent due to the foreign nationalities, which have papers of their own wherever they are numerous; eight of the papers in Pittsburg are German, and out of three daily papers in Fall River two are French for the Canadians there. A condition affecting both America and Germany, though in different degrees, as compared with England, is the greater distance between towns, which tends to produce more local journals. London dominates England far more than New York and Berlin do or can their respective countries; and similarly with the large provincial towns and their own districts. Then newspaper reading-rooms are far more general in England, which probably tends to diminish private customers and so to discourage enterprise. I do not know that multiplicity of newspapers is a very desirable thing; a great many of them merely exist to push some narrow interest or dubious propaganda.

With regard to quality that is to some extent a matter of taste and not to be decided dogmatically: one likes what one is accustomed to and it is not easy to be impartial. As purveyors of news, however, the best English papers are not equalled by any that I have seen elsewhere. For comprehensiveness and accuracy *The Times* stands quite alone by universal consent, and it is most nearly approached by two or three other English papers, though some deterioration seems to be taking place in the endeavour to increase circulation. German newspapers have vastly improved within my own recollection, and the best of them are now very well served with news. They are also strong in thoughtful and learned comment. The provincial papers, headed by the *Kölnische Zeitung* and the *Frankfurter Zeitung*, are particularly good; the *Kölnische* is undoubtedly the most influential provincial paper in the world; none is so widely and so often quoted. American newspapers are more insular in regard to news; their home news is very full but the "foreign intelligence" is scrappy and meagre. So far as I know, no American paper even attempts to cover the whole ground, and the greater part of such foreign news as is given comes second-hand *viâ* London. On the other hand, I have often been struck by the great ability and knowledge shown in the comment on

affairs not only in leading journals but in many provincial ones.

The press has great responsibility; it is the keeper of the national conscience, the final court of appeal, the last bulwark of justice, honesty and liberty. In this regard the weakest points in all three countries arise from national conditions. In Germany it is subservience to government control or influence; in England and America it is subservience to political party or to commercial ends. All three poison the springs of truth, but the last is worst because it is final; the ultimate arbiters are the public, for a newspaper must have readers or perish; and if they accept or demand the false, the unworthy or the base, they are certain to get it. Official lies do not long deceive and party politics are counterpoised by other party politics; but fabricated news, sensational or nasty details, vulgar personalities and other base devices for attracting readers not only pander to a vicious public taste; they create and develop it. The United States still leads in this kind of journalism though England is now paying the sincere flattery of imitation and Germany is not guiltless. For sheer display of what is gross and vile the Berlin comic papers defy competition.

Newspapers, like nearly everything else, are cheapest in England; the number of half-penny ones is now very large and constantly increasing. The newspapers of the people are the half-penny evening journals which are published everywhere and are the only daily papers published in many towns. They depend for their circulation on sport; they contain "all the winners" (of horse-races), the "latest cricket" and the "football results". The only other papers largely read by the working-classes in England are the penny weekly journals, which are read at home on Sunday. They are chiefly devoted to crimes or sensational trials, particularly divorce cases, and to the doings of royalty, which are the only standing subjects, except sport, that interest the English working-classes. The American cheap Sunday papers appeal to the same class by the same means, and they are more sensational. They publish coloured cartoons or illustrations, and I understand that this is the origin of the term "yellow journalism". One

of these papers distinguished by its recklessly sensational style, published a startling picture or series of pictures in bright yellow, and hence the term. I fail to see any elements of national strength in the multiplication and diffusion of cheap newspapers of this class. German papers are relatively dear; that is to say they give very little for the money, and the paper is bad.

On a general review I must put the English papers first. They are as fearless and independent as the American, and they guide rather than follow public opinion. The best of them have a dignity, gravity and weight only equalled by the high courts of justice; they share with that great and stainless institution the chief honour of maintaining a high moral and intellectual standard.

Locomotion.

For intra-urban locomotion electric tramway traction has now become general, except in the streets of inner London. A few years ago English towns were very far behind both American and German ones, partly in consequence of the adherence by the Local Government Board to obsolete regulations; but they have recently made up lost ground very rapidly, and though statistics show a great superiority in the United States [1] I find as a matter of actual experience very little to choose between the three countries in respect to the facilities provided in large urban centres, always excepting London; and even the outskirts of London are now fairly provided in some directions.

The differences in price I have already noted in Chapter XII. on the cost of living. Another prevailing though not universal difference is the preference in England for double-decked cars over single ones with covered standing platforms at both ends, which are general in Germany and America. In my opinion the latter are greatly superior, and I am at a loss to understand the choice of the cumbrous, unsafe, less frequent, less speedy and less convenient double cars in England. On the other hand the tracks are usually better laid in England. That observation does not apply so much to the lines in important thoroughfares in the centre of

[1] Statistical comparisons will be found in the Twelfth Census U.S.A, "Special Report on Street and Electric Railways," pp. 149, 152.

towns as to those in outlying parts. In England tracks are usually laid in the same manner throughout, whereas in Germany and America cheapness is secured at the cost of quality outside the central areas. That is particularly noticeable in Germany, where the tracks are often terribly rough. In America, as a rule, a very heavy rail is used in the large towns—from 70 lbs. to 135 lbs. a yard—and when well bedded it gives a very firm track, but that is only done where the traffic is heavy; elsewhere the bedding is very poor and sometimes excessively light rails—as low as 15 lb. to the yard—are used. In England a moderately heavy rail is used, but it is uniformly well bedded, which makes the lines expensive to lay.

The overhead wire system is by far the most general everywhere; it obtains in 97·2 per cent. of the electric tracks in America. In Germany it is not infrequently combined with a conduit system wherever the latter is more convenient at particular points; but instead of a trolley a broad wire loop is carried at right angles to the conducting wire and brushing its under surface. This obviates the inconvenience caused by the wheel slipping off the wire.

Speed is generally greater in Germany than in England and considerably greater in America than in Germany. Speed is, indeed, the most salient point of difference. I have never found a car going at all fast in England, and about London they are abnormally slow, like everything else in the most backward of all large towns. But speed in America is bought at the cost of accidents. In 1902 the number of persons killed was 1,218 and injured 47,429. Two-thirds of those killed (831) were run over; the number of passengers affected was—killed 265, injured 26,690. Speed in the streets accounts for the persons run over; bad tracks and other standing defects for the passengers injured.

Electric tramways are usually owned and worked by municipalities in England, always by companies in America, and by both in Germany. Municipal ownership with the working leased to a company is common in Germany and seems to be the most satisfactory method.

The provision of electric tramways has made a vast difference to the industrial classes in getting to and from work; it enables them to live on the outskirts of towns

where housing is cheaper and less congested. The result is a general centrifugal movement which to a large and growing extent counteracts urbanisation by suburbanisation. The ever-increasing proportion of the population living nominally in towns does not really live under urban conditions but in a sort of half-and-half state. In England bicycles are now much used by working-men, where there are no trams or trains.

Intra-urban methods of locomotion other than electric tramways — overhead and underground railways, motor omnibuses—are developing, but only in a few particular localities, and they are as yet relatively unimportant.

The great numerical preponderance in proportion to population of tramway traffic in America, which is shown by the statistics referred to above, is due less to superior facilities than to reluctance to walking and to an enormous use of the cars on Sundays. What do you do on Sunday? I asked everywhere; and the answer always was, "Mostly ride on the cars". They do not stream about the streets on foot in throngs as in England and they do not go to the music hall or dancing saloon as in Germany.

Inter-urban electric traffic is far more developed in America, particularly in the New England and the Central States, the former for short distances, the latter for long ones. Indianopolis is a great centre; it is possible to travel from there by this means for more than 300 miles right into Western Virginia and for 100 miles or so in many directions. Detroit is another great centre for long-distance tramways. There is nothing like this extension in England or Germany, but in both countries towns and villages lying near together are linked up by networks of tramways. That is the case, for instance, in Yorkshire, Lancashire and the Midlands; and similarly about Düsseldorf, Dresden and Chemnitz. In England, however, we have not got fenced electric tracks, as in America and Germany.

The railway development is superior in England, and this tends to discourage other methods of traction, of which New York State is an illustration. The inter-urban tramways are much less developed there than in other States, having fewer railways in the North and West. On the whole railway travelling is far the best in England.

This is the only country in which services are provided at once cheap, comfortable, fast and frequent. There is very cheap travel in Germany, and it is safe and punctual; but the cheap travelling is very uncomfortable, slow and infrequent. In America there is rapid and comfortable travelling, but it is dear and infrequent; the ordinary trains are slow, and in winter all are intolerably overheated. The larger carriages used in Germany and America are more convenient, but in the cheap classes they are very uncomfortable, and the jolting is much greater by reason of inferior tracks. The tests I use are reading and the behaviour of glasses and bottles on the table. On the best lines in America and Germany I have never been able to put a glass on the table, pour into it and let it stand, as one can on all the six or seven large lines in England which provide meals on board. Writers who pick out a single point, such as cheap fares in Germany or "drawing-room cars" in America, merely mislead. The other day I travelled from London to Sheffield; the distance is 165½ miles, and it was smoothly run with absolute punctuality in 3 hours and 20 minutes for 157 pence. The train was a corridor with entirely comfortable cushioned seats and ample room; they served a dinner consisting of soup, salmon steaks, roast lamb and green peas, stewed fruits and jelly, cheese, butter and lettuce for 2s. 6d.; and every single dish was first-rate. The soup was so hot we had to wait for it to cool; the salmon was as firm and dry as if it had just come out of the water; the peas might have been picked an hour before. If we had paid 10s. at the Carlton the food could have been no better. That was on the Great Central Railway, which is not considered one of the foremost English lines, and the combination of cheapness, speed and comfort could not be equalled in any other country. Nor can the excursion trains which take the working-classes to the seaside in summer for almost nominal fares; no other people enjoy the same privileges.

Other Public Conditions.

I can only summarise some other points affecting corporate life. Municipal administration is very highly organised in Germany, more so in some respects than in England,

but it differs in certain important features. It is non-political and less dependent on elections. The mayoralty is a paid and more or less permanent office, and the town council has a large permanent element. There is consequently less inducement or opportunity to push private interests or theories, and the administration is conducted more generally with a single eye to the public interest. It is on the whole more practical and efficient; it does not embark on large transactions regardless of economy, and is more successful in making its enterprises pay. The functions of the local authority are more varied and important than in England; they include the collection of imperial as well as local taxes, the administration of the poor-law, public hospitals and public education, as well as police, sanitation and so forth. Yet there is little "municipal socialism" as yet, though there seems to be a movement towards it in some localities.

In America municipal enterprise is much less developed and the administration conspicuously inferior. It is idle for American communities to claim a lead in civilisation so long as their rotten municipalities and incapable administrations offer a warning to all the world. As I have said in the first chapter, we have no cause to boast in England on this subject; but we have had a lead in time with regard to certain matters and are still ahead in them. Street paving is one, though to that there are exceptions; sanitation and sewage disposal and markets are others. On the other hand, we are painfully inferior in street lighting, which is, I think, best done in America, though some towns in Germany are at least equal to the best. In public baths Germany is far ahead; the beautifully appointed establishments, even in towns of moderate size, make one ashamed of the dirty little places that do duty for baths in most of our towns. In parks American towns frequently have a larger area, but ours are more numerous and generally much more attractive by reason of superior verdure. Germany is less well provided.

I might mention many other points, but I think these will suffice. It will be seen that no country is first or last in every feature of municipal life; but taking one thing with another I find the German standard highest and the American lowest.

CHAPTER XIV.

TRADE UNIONS AND INDUSTRIAL DISPUTES.

Among the many gifts of England to the industrial world none is more prominent than the modern organisation of labour. Regarded calmly and in perspective the gradual building up of the trade unions in the face of every obstacle and without help or encouragement is a most remarkable achievement. It is the complement of that method of production which is commonly called the "factory system". Doubtless combinations among workmen can be traced back to a much earlier period; for the matter of that most institutions can be traced back, in some form, to a time when all records fail, and probably the workmen who built the pyramids had their unions. But the organisation of to-day, with which alone we are concerned, is the product of the factory, though it has since spread to other occupations. The factory made it possible and the conditions of the factory made it necessary. I have insisted before that the factory was, in the main, the creation of the workman. Most of the large concerns of to-day, even in America, were originally started by workmen in a small way, and though the practice of establishing works on a great scale by subscribed capital has since come into play and is growing, I believe it could be demonstrated that even now more manufacturing concerns are started by successful and enterprising workmen than by mere capitalists. That it was so a hundred or fifty or thirty years ago will not be doubted by anyone who takes the trouble to inquire into the origin of existing works. In the town of Longton, for instance, there are some ninety pottery or china works; every one of them was originally started by a workman, and some so lately that they are still carried

on by their workman founders. That trade requires less capital for a start than many others and therefore it offers a more striking illustration, but in earlier days that was the regular course in all of them.

Now, no men are harder taskmasters than such employers. They are themselves hard workers, frugal, saving and self-denying; it is the exercise of those qualities that enables them to become employers. Then they have a hard struggle to succeed, and as they do not spare themselves they are not minded to spare those whom they employ. They have the bent for making money and "getting on," and cling tenaciously to all profits they can scrape together. Consequently they exact as much work and pay as little as possible. It is a delusion to suppose that workmen who "rise" have a fellow-feeling for those they leave behind. If you take any large works, who are the people connected with it that have least sympathy with the workmen? Not the wealthy men at the head of it, not the shareholders, not the educated and well-paid manager or engineer, but the foremen. It is largely the superior power wielded by the foremen and their unsympathetic use of it that keep the workmen apart from their employers and place them at a disadvantage in certain respects in English factories as compared with American ones, notably in the matter of suggestions and new ideas which may be taken up and lead to advancement or reward.

The true origin of the factory has been obscured by the domination of the words capital and labour, which call up a picture of a set of rich men and a set of poor ones so fixed for all time At any given moment it holds good in the main, but the assumption that it has always been so and always remains so is quite false. The picture takes no account of the movement which is always going on. There is, in fact, a perpetual flux of the units which compose it, poor becoming rich and rich poor, some rising and others falling in the social scale. And the development of manufacturing industries was chiefly a process of workmen rising to be employers. This fact largely accounts for the excessively hard conditions of factory life, which were imposed by risen workmen upon the rest. The answer of

the rest was trade unionism. If they had not the gift or the opportunity to become employers they yet found a way to protect themselves; and with infinite pains they reared the structure of trade organisation over against that of the factory. Both have sprung from the self-helpful workmen of England, the one representing the more gifted few, the other the less gifted but still virile many.

It was a painful process, so painful that nothing but sheer necessity could have forced its accomplishment; painful not only by reason of the obstacles presented by the law, by tradition and by powerful interests, but because of the difficulty of getting men to combine at all. The organisation of labour is a phrase that runs glibly off the tongue, but few who use it realise the enormous efforts and heart-breaking struggles it conceals. The organiser of labour is popularly supposed, even by his own clients, to have a very easy time, drawing a comfortable salary with nothing to do but go about, speechify and get up strikes. There have been and are such organisers, but they do not last long. It is not in that way that trade unionism has been built up. I was talking not long ago to a veteran, who has spent his life and energy on it; a reticent thoughtful man, not a talker; and he said, "If I had a son who wanted to go in for organising labour I would flog it out of him". The chief trouble arises from within, and that not only from jealousy, intrigue and ingratitude, but from the reluctance to combine, which is due in part to an independent spirit, but more to the dislike of making any immediate sacrifice for the sake of ultimate benefit. The difficulty of getting men to combine is shown by the desperate means to which trade unions have been compelled to resort in order to force compliance, and by the intense animosity displayed against those who refuse. They have been accused of intimidation, violence and tyranny, and their annals confirm the charge; they have been guilty of all those things time and again. Every one who has been at all among workmen has met cases of compulsion and oppression, bitterly resented; and in earlier times coercion was employed in a far more savage and violent manner than it is now. The use of such means is commonly denounced, and I am not concerned to defend them; but the dispassionate

student may look beyond that aspect of the matter and see in them evidence of the difficulties which trade unionism has had to face and of the resolution which has been required to overcome them. Such resolution could only be aroused and sustained by necessity. The British unions have sailed into calmer waters of late years; but the necessity still remains. The secretary of a large employers' association said to me recently, "There are bad employers, as there are bad workmen, and therefore trade unions are necessary".

I have put down these few reflections on the origin of trade unions because they have a direct bearing on my subject. I see in this long-drawn, toilsome and successful struggle a signal proof of the energy and endurance of our people, a proof not second to the development of manufactures of which it is the complement.

Both have sprung from the soil and in both England has led the world. But when we look at the present stage of both in their comparative aspects we see a difference. England is far more decisively ahead of other countries in labour organisation than in manufactures, if she is ahead in them at all; and I have no doubt the reason is that the former has had more difficulties to struggle against. It is not ease but difficulty that makes strong. The stage of development reached by trade unions in England and their present bearing on industrial life seem to be very imperfectly realised. Few subjects are habitually regarded in such a violently partisan light; some can see only the merits, others only the defects of the unions; but at home there seems to be a growing inclination to take a calmer and fairer view of them. Abroad, the view is antiquated. The English unions are regarded by foreign manufacturers with satisfaction as a heavy drag on their English competitors, but the satisfaction is tempered by a well-founded fear that their own unions are following the pernicious example. Foreign unions, on the other hand, regard the English ones with envy and credit them with a power which they not only do not possess but show less and less desire to acquire. These observers do not realise the changes which are taking place through the relations between organisations representing employers and employed and the

discipline which recognition and responsibility are bringing into the ranks of trade unions.

The chief difference between trade unions in England and those in other countries is that the former have reached a more advanced stage of development. Elsewhere the English societies are generally regarded as an example to be followed as nearly as varying conditions permit, and a great many unions in foreign countries are actual copies of an English model. In America English trade unionists are numerous, and they are often found conducting the affairs of local unions, many of which have been founded by English workmen, naturally on the lines of those at home. There is therefore a general resemblance but with many differences and modifications.

A detailed comparison is neither possible nor necessary for my purpose. It is not possible because of the great variety of types and the lack of exact information about them. There is no uniformity among trade unions in any country; they have for the most part grown up from small local beginnings and have taken shape accordingly. But certain points of comparison must be noted.

Numbers.—With regard to numerical strength the statistics are everywhere defective and unsatisfactory. Those for England are the best. I am not fond of estimates, which generally mean pitching on some nice round number which suits the predilections of the estimator; but we sometimes have to put up with them. In 1903 the membership of trade unions was returned or estimated at "about" 2,000,000 in Great Britain, 2,000,000 in the United States, and 1,200,000 in Germany. The American estimate, which is taken from Mr. John Mitchell,[1] is based on rather vague *data* and seems very generous, as the unions affiliated to the American Federation of Labour in 1902 showed a membership of barely more than 1,000,000. Considering the doubtful character of these statistics and the difficulty of ascertaining with accuracy the number of persons who might be members of trade unions I do not think it advisable to attempt any estimate of the relative proportions of organised and unorganised labour in the three countries; but it is clear that the unions embrace a much larger pro-

[1] *Organised Labour*, by John Mitchell.

portion of the population in Great Britain than in Germany or America. That superiority is especially marked in regard to the manufacturing population. I have laid stress on the factory in discussing the rise of the unions, and there is no doubt that the conditions of factory employment led to their formation; but other great industries took them up afterwards. Among them mining holds the first place; followed by building, railways and docks. These, however, concern me less than the manufacturing industries, in which organisation is very much more advanced in England than elsewhere. The unions are not only larger, but they have existed longer, and since the contributions are much higher they are wealthier and more powerful.[1]

Constitution.—With regard to constitution and management no substantial or general differences exist. As I have said, there is no uniformity among unions, but they are all based on a general democratic principle, which takes different forms in different stages of development. The course of development, however, seems to be towards greater uniformity in detail, resulting partly from experience and example, partly from the tendency to amalgamation or federation. This tendency is more marked in England and America than in Germany, where the unions, as I shall presently show, are divided into sections by differences of aim and principle, which have nothing to do with the immediate objects of combination, and are a source of great weakness. A special tendency towards grandiose combinations is displayed in the United States. The "American Federation of Labour" is the last, and probably the most successful of several attempts to combine all workers into one gigantic organisation. Founded in 1886, it has practically superseded the "Knights of Labour," which preceded it, and it claims superiority over that moribund corporation in being "governed from below," not from above. The majority of the American unions are affiliated to it, though most of the wealthy and powerful "Railway Brotherhoods" are outside. The list for 1903

[1] In 1902 the income of the 100 principal unions in Great Britain, representing three-fifths of the whole, was £2,067,666 and the reserve fund £4,372,173; the income of the German unions was £893,210, and the reserve £827,390. For the American ones I have no corresponding figures.

includes 21,640 affiliated unions of one sort or another. Their relations to it are loose and its functions somewhat vague, but it is an active body, principally engaged in promoting the formation of local unions. It has a fine set of offices at Washington, where I counted thirty-six typewriters all working with characteristic American ardour. This is peculiar; but several English unions are quite as well housed, and the head-quarters of the German Social Democratic unions in Berlin is even more imposing.

Legal Position.—Trade unions are recognised by the law in all three countries, but their legal position differs in some important respects. Nothing, however, is more difficult to define. In England, recent decisions in the High Courts have thrown the subject into such confusion that no one knows where the trade unions stand. The most important of these decisions was the celebrated Taff Vale case, which arose out of a strike on the Taff Vale Railway in 1900, and has excited universal interest throughout the industrial world. The upshot was to decide that trade unions are responsible for wrongful acts done by their agents, and can be sued and cast in damages. This has been a tremendous blow; it is held to have practically annulled the charter of trade unionism, which is the Act of 1871, and to have crippled the effective power of the unions to the point of helplessness. The argument involves the whole theory and practice of trade unionism, into which it is not my purpose to enter. But the real point is that old difficulty on which I have insisted above, the difficulty of getting men to combine. There seems on the face of it no harm in making trade unions, in common with other bodies, responsible for wrongful actions committed by agents; the remedy is simply not to commit them. But that is where the difficulty lies; what are wrongful actions? Apart from the criminal law, the conduct of industrial disputes and the relations of unionists to non-unionists are governed by the Conspiracy and Protection of Property Act of 1875, which relieves of conspiracy persons combining to do a thing which is lawful for an individual, but forbids violence, intimidation, persistent following, hiding tools, watching and besetting, following in a disorderly manner in public. Persons guilty of these acts are liable to action and damages on

the part of persons injured by them, whether in the course of a strike or in general furtherance of unionism, as by blacklisting or putting pressure on employers to discharge nor not to employ non-nionists. The interpretation of the law by the Courts practically forbids picketing except for the purpose of obtaining information; but until the Taff Vale case it was thought that trade unions were not liable for such acts. What they fear now is that it will prevent them from effectively carrying on a strike, which is their last resort, because they may be liable to damages for picketing. And picketing is only necessary because men will not combine without pressure. In proportion to their unwillingness is the temptation to carry coercion beyond the limits of the law increased. One result will undoubtedly be—or I might say has been—to turn trade union effort more into political channels. That is the natural effect of restriction and it is illustrated by Germany.

The law relating to trade unions is not in such a state of confusion in Germany as it is in England, though it leaves the limits of trade union action uncertain in many respects. Its superior clearness is largely due to the fact that some things, the legality of which is doubtful in England, are expressly forbidden in Germany. In other words, the activity of trade unions is more restricted by law, and this is one of the chief reasons why most of them have assumed a political character, which distinguishes them from those in England and America.

The charter of trade organisation is section 152 of the industrial code, by which the right of combination "for the purpose of obtaining more favourable wage-and-work conditions" is secured to all employers and employed, except servants, agricultural labourers and seamen. The paragraph expressly mentions the cessation of work and dismissal of workers—otherwise strikes and lock-outs—as lawful means to the authorised end. This seems clear enough, and no doubt it effectually legalises the position of ordinary trade combinations and their proceedings. But there are some points to be noted. It has been laid down by the High Court that the section only contemplates combination for the improvement of individual conditions. If the unions go beyond the economic interests of their mem-

bers and aim at exercising an influence on public affairs or the discussion of political subjects, they come under the law regulating clubs. The section, further, does not legalise any proceedings which are otherwise forbidden. If the means adopted to obtain more favourable conditions are actionable under the ordinary law, then the action lies against the combination, and the persons acting for it. In fact, the union and those who represent it are responsible for acts committed on its behalf. Orders or incitements to breach of contract, for instance, would render union officials liable to action. This appears to settle those questions of liability which have recently led to so much confusion and uncertainty in the English Courts. Equally clear is the German law with regard to pressure brought to bear on individuals to join in concerted action. Physical compulsion, intimidation, abuse or denunciation for the purpose of inducing others to join or of preventing them from leaving such combinations is punishable by three months' imprisonment, if it does not entail a severer penalty under the criminal law. Denunciation—we have no exact equivalent of the German word—is any expression which is intended to bring a person into ill repute as unworthy of intercourse; it would include such terms as "scab" and "blackleg". Threats of any kind come under this provision, so long as they are intended to limit the free action of the individual. Simple picketing, however, appears to be in a doubtful position. The question came before the High Court in 1900 in regard to some regulations issued by the Senate of Lübeck which prohibited picketing. The Court held that the regulations violated the right of combination guaranteed by section 152 of the industrial code, and were, therefore, invalid, but left the question open whether picketing could be dealt with by the police on other grounds. By an order in council dated 18th January, 1898, it was pronounced punishable as "grober Unfug," disorderly conduct.

Like other laws in the United States, those relating to labour organisations vary in different States. Combinations are everywhere lawful, but certain States have passed special Acts for the protection of trade unions. For instance, fourteen States have laws prohibiting employers

from discharging men because they belong to a union or from compelling them to agree not to join one as a condition of employment; nine States have Acts specially declaring trade combinations lawful; the Federal Government and several States have passed laws providing for the incorporation of unions, and nearly all the States have accorded statutory protection to the trade union label, a device peculiar to America. It was introduced in 1874 by the Cigar-makers' Union, first as a mark of discrimination against Chinese labour, but was presently applied against all unorganised labour and became very popular. It consists of a slip of paper or stamp attached to goods indicating that they are the product of trade union workshops.

As elsewhere, however, the real trouble lies in the relation of organised to unorganised labour and in the legal aspects of methods, direct or indirect, adopted to compel combination, such as boycotting, black-listing, intimidation, threats and so on. Many States have laws prohibiting these things, with varying degrees of stringency, and applying both to employers and employed. But there is the usual uncertainty in the interpretation of the law and in defining the nature of the offence. Actions are frequently brought by men who have been discharged through pressure brought to bear on employers by unions, and with varying results. In June, 1905, the Supreme Court of Massachusetts awarded $1,500 damages to a shoemaker who brought an action against the representative of the Boot and Shoe Workers' Union for obtaining his discharge. In February, 1905, the Supreme Court of Vermont awarded $2,500 against the Machinists' Union for picketing, etc. The Supreme Court of Minnesota recently decided in an action brought against the Bookbinders' Union that the Union can neither sue nor be sued. The Appellate Division of the Supreme Court of Ohio recently refused an injunction to restrain a company from discharging workmen because of their failure to join a union; but the judge said that on trial the result might be different, and the evidence might justify an injunction "against the picketing in the manner of its doing, against the boycotting in the methods of its practice, and more". These few recent cases sufficiently show that the legal position and

liability of trade unions are at least as uncertain in the United States as anywhere else.

Funds and Payments.—I have said that the contributions are on a higher scale in the English than in the German and American unions, but they vary so much that a statistical comparison is hardly possible. In Germany they are very low, running usually from 10pf. to 30pf. a week, or a little more than 5s. to 15s. 7d. a year; but in the Hirsch-Duncker unions (see below) they rise to 30s. a year. In England they range among the 100 chief unions from 7s. to £4 a year, and the average was 36s. 7d. in 1903. Mr. John Mitchell is my authority for saying that the rates are much lower in America. He does not, however, give comparative figures. I find that in the Mule Spinners' Association of Fall River, which is one of the oldest and strongest unions, the rate is £2 12s., which is exactly the same as in the corresponding unions of Bolton and Oldham, namely, 1s. a week; but this comparison cannot be taken as typical.

With regard to payments, some differences are to be noted. Trade unions have generally a double character with two objects, which are distinct, but seldom distinguished in the minds of the members or in the practice of the society. They are fighting bodies and at the same time benefit societies, and the funds are allocated according as one or other character predominates. In the English unions the fighting character has generally predominated, and the first charge on the funds is "dispute benefit" or "strike pay". Of the 100 principal unions all provide for this charge. Some unions provide for nothing else; but they are generally of a temporary character, more or less instituted for the occasion, and hardly to be called unions. In all cases strike pay takes precedence, and, if necessary, swallows up all the funds in hand. The object of dispute pay is, of course, to maintain a strike or a lock-out; it is essentially a fighting provision—in fact, a war chest. But by a natural transition it has led to a benefit expenditure, which is one of the most prominent features of the English unions, and that is the support of men who are not on strike, but out of work for other reasons. In some unions unemployed benefit is not distinguished from dispute pay,

but in many it is a separate item. The amount so expended in times of depression is very large. In 1903 the 100 principal unions spent over £500,000, equivalent to nearly 9s. a member, on unemployed benefit. The engineering and ship-building group headed the list with £224,000, and the textile unions came next with half that amount. The miners, who form numerically the largest group of all, spend comparatively little on this object. In Germany the corresponding expenditure was less than £73,000. The payment of unemployed benefit is confined to the Hirsch-Duncker and some twenty Social Democratic unions (see below). I have no figures for the American unions, but the amount is comparatively small. The Cigar-makers' Union, a strong body with the most extensive benefit system of all the American unions, spent in the twenty-three years 1879-1900 the total sum of £183,400 on out-of-work pay, exclusive of strikes.

The payment of unemployed benefit has an important influence not only in securing the welfare of members during periods of depression and preserving their self-respect, but in enabling them to maintain the standard of wages. It is one of the points in which the superiority of the English unions is most marked.

Other forms of benefit are of less importance. Next to strike pay funeral benefit is the most general provision, and that in all countries; sickness and accident pay is also very general; superannuation allowance much less so. Some of the American railway unions are distinguished by the very large sums they pay for death benefit, up to £900 (Mitchell). Another point of distinction about American unions is their activity and expenditure on the formation of local branches. That is the chief business of the American Federation of Labour, and Mr. Mitchell states that "nearly all of the national organisations employ paid organisers who are constantly engaged in forming local unions".[1] The United Mines Workers, who form by far the largest group, had in 1902 eighty paid and 200 unpaid organisers devoting their time to the work, and spent £22,000 on it.

Special Features of German Unions.—The political

[1] *Organised Labour*, p. 77.

character of the German unions is a point of considerable importance to which reference has already been made. In order to make it clear a somewhat detailed account of these unions is necessary. Other matters of sufficient general interest are involved to warrant the devotion of some space to the subject, which is little understood out of Germany.

There are four different classes of trade unions:—(1) "free" or Social Democratic Gewerkschaften, (2) "Christian" Gewerkschaften, (3) "German" or Hirsch-Duncker Gewerkvereine, (4) independent Gewerkschaften.

(1) The first or Social Democratic group is by far the largest. The beginnings of these bodies date from about 1865. They originally represented a spontaneous labour movement and were regarded with indifference or hostility by the Social Democrats, who followed the teaching of Marx or Lassalle and saw no hope for labour save in the realisation of a political and economic revolution. In their eyes "self-help" was a delusion, and in so far as it might succeed, or apparently succeed, could be only an obstacle to their programme; but the interest taken by working-men in the movement suggested that it might be utilised as a means of political agitation, and in 1868 some members of the Lassalle party busied themselves in founding unions, which for the most part had a very brief existence. The followers of Marx, notably Liebknecht and Bebel, had somewhat more success in the same direction, until the anti-Socialistic law of 1878 swept over the movement like a hurricane. The strength of the unions during this period is not exactly known, but an investigation in 1877 showed that there were then about thirty organisations with branches in 1,266 places, and some 50,000 members in all. The numbers had been considerably higher some years before, but the Marx party became rather alarmed lest the movement might be too successful in reconciling the work-people with the existing order of things, and consequently discouraged it. The anti-Socialist law dispersed most of the unions for the time being but the impulse to combine was not to be denied, and organisations quietly reformed under a different name. They were, indeed, rather stimulated by repression, and before the law was repealed in 1890 they had reached a far higher membership than before

or for several years later. This goes very strongly to show that trade union organisation is not the creation of Socialism, even in Germany, but of the impelling force of common needs and interests among the workpeople themselves. Failure to perceive this fact leads to a misconception of the labour situation. After 1895 the unions began to increase rapidly, and were particularly stimulated by an agitation against the proposed repressive measure known as the Zuchthaus-gesetz in 1899. In 1903 the number of affiliated organisations was sixty-three with a membership of 887,698, and there were in addition some local unions with 17,577 members. Their income was £751,591. The largest groups are the building trades, metal workers, miners, general labourers and textile trades in numerical order. One-third of the expenditure was for strike pay.

These trade unions are commonly called Social Democratic, but their relation to the Social Democratic political party is vague and undefined. They are nominally non-political, or at least they have no avowed connection with a political party, and it must not be assumed that they are thick-and-thin supporters of the Social Democratic programme. The truth seems to be that the two seek to use each other and exercise a mutual influence. The Gewerkschaften form a large organisation, admirably adapted to further a political campaign, and the party in turn is a Parliamentary force which can do a good deal to promote the aims of the unions; but it is to be noted that as the party increases its strength by canvassing the labour vote through the unions, it slowly and reluctantly but steadily and inevitably modifies its programme and its tactics. The working-classes want to "better themselves" by getting an easier life and a larger share of what is going; they do not want a class war or a revolution, though, of course, there are individuals among them who believe in the whole Socialist theory. The fact that the masses do not is further shown by the development of the anti-Socialist unions, which will be presently described. If this is taken into account, together with the significant modification of the Socialist party's attitude as its success increases at the polls, it is, I venture to think, clear in which direction things are tending. There are many things that labour wants far

short of the "nationalisation of all the means of production," and it is going to get them, or some of them, by degrees. With the two most powerful parties in the Reichstag bidding directly for the votes of working-men and supporting trade unionism the issue is certain. Moreover, as they get them the "nationalisation, etc.," and the class war will quietly drop out of sight. Social Democracy will not be the first movement which has died of apparent success.

(2) The "Christian" unions. They are of much more recent date than the first and third groups, and their name needs some explanation. They are called "Christian" to distinguish them from the Social Democratic unions; the word is intended to signify anti-Social Democratic. It is not that they are religious organisations; on the contrary, their aims are purely economic and social; it is rather that the Social Democrats are anti-religious, and the "Christian" unions stand for a protest against that spirit, which has infected the "free" Gewerkschaften along with the Social Democratic politics. The point is of great interest, and, as it appears to be very little understood in England, I will enter into it a little more fully.

The Social Democratic teaching is essentially anti-religious. The spread of atheism used to be set forth openly as one of the cardinal points in the programme. "We are simply done with God" (Engels); "We open war upon God because He is the greatest evil in the world" (Schall); "It is our duty as Socialists to root out the faith in God with all our zeal, nor is any one worthy of the name who does not devote himself to the spread of atheism" (Liebknecht)—these utterances by former leaders of the party indicate the spirit. Now, Berlin is the head-quarters of Social Democracy and of the Social Democratic unions, and such sentiments have found a good deal of support there; but, as I have already pointed out, Berlin does not represent Germany. It is a great mistake to regard the German people as particularly sceptical. Some classes are, no doubt; but in the mass the people are God-fearing; and even among the highly educated there is less confidence than there was in the sufficiency of science and reason to settle everything. That attitude is antiquated. On various grounds the crude assaults of the Social Demo-

crats upon religion were generally resented, and it is only since such violent utterances as those quoted above have been dropped that the political movement has made rapid way. This is one of the modifications referred to above. It was found politic to adopt a milder tone and to profess indifference about religion, though anti-Christian pamphlets are still issued and sold. The present attitude found amusing expression in the Reichstag in the session of 1903, when the deputy Albrecht, who is a master tailor at Halle, laid down the views of the party in the following terms :—

> We regard religion as a private matter, we deprive no one of his religious convictions; but we tell the working-men to acquire as much knowledge as possible, for the more they know the less they need to believe. Eventually, when they know everything, they need believe nothing.

These remarks, apparently delivered in good faith, naturally caused great amusement. It would be unfair to saddle the whole party, which contains some highly educated men and embraces fundamental differences of opinion, with the follies of an ignorant member; but his words sufficiently represent the attitude of orthodox Social Democracy towards religion; violent hostility has been modified to contemptuous tolerance, and the cogent reason for the change is that hostility did not pay. The Christian unions are standing witnesses to the fact.

The revolt against the anti-religious spirit within the "free" Gewerkschaften and the foundation of separate unions originated with the miners of the Rhine Westphalian coalfields in the year 1894. They had already for some years had experience in organisation of a different kind in the "Christian Social" societies (Vereine), started in 1869, and attempts were made from time to time to found a trade union, but without lasting success, until the appearance of a Social Democratic federation of miners and ironworkers stimulated an energetic attempt to establish rival organisations and dispersed the fears of the Christian Social leaders, who found themselves compelled in self-defence to accept and assist the strong bent of the workmen towards combination on the lines of the English trade unions. The movement started by the miners was taken up by other trades and spread to various parts of

Germany. In 1903 the total membership was returned at 192,617, distributed in thirty-one chief organisations. The railway men are particularly strong in these unions, having, in 1902, 67,674 members in Prussia, Bavaria, Baden and Würtemburg. Of the other trades the original miners' union still remains the strongest, with over 40,000 members in 1903, and the central union of Christian textile workers comes next. The income in 1902 was £53,864. The head quarters and the general secretary's office are at München Gladbach.

The practical objects of the Christian unions are (1) to secure the efficient administration of the existing social laws; (2) to promote their extension and completion; (3) to improve the condition of the working-classes by co-operative self-help. In pursuing these ends they rely upon the principle of combination independently of political parties, but their antagonism to the Social Democrats creates a certain bond between them and the Central party, and they are not free from the entanglement of political patronage. Their only quarrel with the Hirsch-Duncker unions, with which they are otherwise in cordial sympathy is that the latter are too supine in pushing the cause of labour and confine themselves too much to pecuniary benefits. Religious matters form no part of their proceedings, and Catholics and Evangelicals are equally welcome; but they take their stand generally on the Christian religion as a moral and social basis, and are absolutely opposed to Social Democracy. What they look forward to is eventual union with the "free" Gewerkschaften, when the latter have purged themselves from this taint, but at present such a consummation is not in sight. Probably the last elections, with the sweeping success of the Social Democrats, have put it further out of sight than ever for the time being; but it remains to be seen what the party will do for its friends. If it does nothing—and hitherto it has done rather less—a reaction is not unlikely. The trend in all countries is to the formation of a Labour party, and the German workmen, who are strongly resolved to have a larger share in the growing prosperity of the country, may see their advantage in cutting loose from a sterile dogma and returning their own independent candidates. It is surprising that they have so long put up with the lawyers, writers and employ-

ers who form the bulk of the Social Democratic party in the Reichstag. If they do so, or if, on the other hand, the Social Democrats definitely drop their antiquated dogmas and concentrate on practical reforms, there is no reason why all the trade unions should not work together for common ends. Their present distraction is a great source of weakness.

(3) The "German" trade unions, or perhaps it would be more correct to say trade societies (Vereine), were founded in 1868-69 by the efforts of Dr. Hirsch, formerly a progressive member of the Reichstag. They made rapid progress at first, but came to grief over an unsuccessful strike of miners. After the war they began to recover, and steadily, though slowly, increased. In 1901 they counted over 1,800 local unions and 16 national unions, held together by a central federation. The membership in 1903 was 110,215. The strongest sections are the engineers and metal workers, "factory and hand-workers," cabinetmakers and shoemakers. They are professedly founded on the English model, and seek to improve the condition of their members in a practical way by promoting labour legislation and by benefit institutions. The first is the task of the central federation, the second that of the local unions. With regard to legislation, they do not attach themselves to any party or programme, though in mutual sympathy with the free-thinking sections; but they watch the course of politics, press for measures in the interest of labour, and oppose those which threaten it. Thus they energetically fought the proposed Zuchthaus law, and in doing so found themselves marching with the "free" Gewerkschaften; but there is a strong antagonism between them and the Social Democrats, who have been excluded from their ranks since 1876. Every member before admission has to sign a declaration that he is neither a member nor a supporter of the party. They expressly repudiate the class war and the visionary aims of the Social Democracy; they take what they can get from the Legislature, aim at peaceful relations between labour and capital, while maintaining their own interests, and for the rest rely upon self-help. To this end they pay much attention to benefit funds and particularly to out-of-work support, which is the weakest point of the other unions.

The expenditure on this head in the nine years 1892-1900 was £43,306. Members receive from 6s. to 7s. 6d. a week for 13 weeks. The Hirsch-Duncker unions particularly pride themselves on their sound financial position. In 1900 their accumulated reserve, apart from sick and burial funds, was £55,000. Their total funds were £153,542, and their income £31,453. The other trade unions, or rather the Social Democratic writers and speakers, often sneer at this line of action, but it is more practical than their own and more in accord with the example of the English unions, whose strength and influence they acknowledge and envy.

(4) The fourth class is the smallest; it was credited with 68,724 members in 1903. I am not sure whether the Printers' and Typefounders' Union is included in the group or among the Social Democratic Federation; but it really represents the independent type and is the oldest, best-organised and strongest of the German unions.

Printers are a very intelligent and superior class of workmen, and they are particularly so in Germany, where the compositors' craft is brought to a degree of perfection which can hardly be matched by any other trade. They appear to have had some sort of organisation among themselves, as might be expected of exceptionally skilled and educated men, from a remote period, and to have conducted their affairs apart from the political movement with which the later unions have been more or less associated. In short, their aims and methods more nearly resemble those of the English trade unions. In 1848 they formed a national union, or, as we might say, an amalgamated society, but it did not last long. In 1867 the present national union was formed, and though nominally affiliated to the federation of Social Democratic Gewerkschaften, it stands outside the political movement and is able to protect the interests of the trade without assistance. Thus it has established a machinery for settling disputes and wages by mutual agreement with employers after the English model. The only other organisation which has brought self-help to the same point, so far as I can learn, is that of the cutlery trades at Solingen.

These notes will sufficiently explain the peculiar position of the German unions; it only remains to add that they are

all growing, though with the usual fluctuations, and increasing in power, particularly the Social Democratic group. But their divisions and dependence on patronage from above keep them weak.

We are now in a position to consider the comparative influence of trade unions in the three countries. My own conviction is that on the whole they are a source of industrial strength to England at the present time and constitute a decided advantage to her over her competitors. I am well aware that a contrary opinion is widely held in England, and still more widely in other countries. The unions are believed to be a serious handicap, and they have even been charged with causing a "crisis in British industry". But that charge can only be colourably sustained by a grossly partial selection of evidence. British manufacturers, who are not ignorant though often naturally prejudiced, do not generally take that view. Nothing has struck me more in the course of this investigation than the remarkable difference of attitude towards trade unions displayed, in private, by employers in this country and in the others. I have not heard a single word in favour of trade unions from any employer in Germany or America; the most favourable expression amounted only to indifference on the part of those who do not happen to come in contact with trade unionism. Otherwise the prevailing feeling is strongly hostile; employers hate and dread the unions. In England I have met with no such feeling at all. I have heard the unions unfavourably criticised and sometimes condemned, but without bitterness; I have far more often heard from employers and managers fair and even friendly expressions of opinion. I will give one specimen which has as much value as any expression of opinion can have. It is the utterance of a great captain of industry, an old, wise and experienced man, the active head of one of the largest concerns in the world, and one that comprises many of the branches of industry which have suffered most severely from foreign competition in recent years: "We have certainly been outstripped in some respects," he said, "and the trade unions are partly to blame, but the greater part is the fault of the manufacturer himself; he has been too supine and easy-going. I have always

found the trade union leaders very nice to do with, level-headed and reasonable."

This striking utterance, which puts the whole case as between employers and trade unions in a nutshell, was quite spontaneous. The gentleman, on learning that I had paid a visit to the works, desired to see me himself the next time I called, and that is one of many interesting things he said. It is the more valuable because the industries with which he is connected are among those which trade unions have been particularly charged with injuring. I have heard many others to much the same effect; but the general absence of ill-feeling has made a still greater impression on my mind. It is probable that employers would not express a positive opinion so freely in public as in private; trade union leaders certainly do not, their position is too delicate; but the negative testimony of an absence of ill-feeling is sufficiently eloquent.

The sins charged against trade unions in this country are restriction of output, opposition to machinery, interference with the management, interference with "free" labour and fomenting disputes. Evidence, varying in value, can be adduced in support of all of them; but a just verdict can only be reached by weighing the evidence on both sides of the account.

About some of these charges much misapprehension is current, partly through generalising from a few particulars, partly through confounding the union or its leaders with its members. Every fault is credited to the former, and it is assumed that if there were no union there would be no desire to do the things complained of. The assumption is justified of some things which only come into play with the existence of a union, but in others it is generally the exact opposite of the truth. Restriction of output and opposition to machinery are much older than the unions, and they used to be exercised with far more violence and determination before the unions existed. They are ingrained in the nature of workmen, not only in this but in other countries. Men have risen and smashed machinery in Germany and the United States as well as in England. As organisation has been developed the impulse has been modified not aggravated.

A specific case will illustrate the respective attitude of men and of their union. In the file-cutting trade hand-cutting has within the last few years been replaced by machinery, which turns out the stuff with great rapidity. In one large shop in Sheffield some of the men objected after trying the new method and went to their union. The secretary came down to the shop to inquire. He found that there was no attempt to cut wages, but on the contrary the men were earning more than before. One of the objectors, who had been making £2 4s. 3d. a week on the average by hand-cutting, was earning £2 17s. 2d. with the machines. The secretary declined to interfere and went away remarking that he "wished he had as good a job himself". Nevertheless that man threw up his work and was followed by another who was earning £3 15s. a week (less the boy's wages).[1] They declared that "it was not right to turn the stuff out so fast".

Here is the root objection to machinery. Workmen cannot get out of their heads the idea that there is a certain fixed demand for any commodity, and that if it is produced more rapidly employment must be lessened. They seem unable to understand that demand expands indefinitely with cheapness and that lowering the cost of production increases employment. The trade union leaders, being generally more intelligent, do understand it, and when they say they have no objection to machinery as such it is no more than the truth. But they object to machinery when it is so applied as to lower wages, and they are justified in doing so; they exist for the purpose. Sometimes, no doubt, they are over-suspicious and make needless trouble, but on the whole their influence is moderating. By helping to adjust new conditions, by allaying the suspicions and securing the confidence of the workmen, whose spokesmen they are, they facilitate the adoption of new machinery; sometimes they stimulate the employers and insist on improvements.

Opposition to machinery is one form of restriction of output. Another is due to a far worse cause, which is especially charged against the English unions, and that is

[1] I have examined the books and can vouch for the truth of these facts. I have the names of the men and know the trade union secretary.

sheer laziness. That also emanates from the men, and it is common in trades in which time-work prevails. The building trades have a very bad record; some branches, particularly in the neighbourhood of London, are a disgrace to their country and their class. They include a larger proportion than other skilled trades of lazy, drunken, foul-mouthed blackguards, who take no pride in their work and aim at doing as little as possible. They have made "the British workman" a by-word of contempt and an object of derision. The unions do not exactly enjoin laziness but they too often countenance it. They sometimes enjoin restriction of output in piece-work when diligence is rewarded or they expect it will be rewarded by cutting prices; but that is the fault of grasping employers. I have already discussed the point in the chapter on wages.

In all cases it must be remembered that a great deal depends on the personal influence that happens to be paramount at the time among any group of men and that their conduct is not necessarily dictated by the union to which they belong. In 1902 some pneumatic drilling and caulking tools were introduced into a certain large shipbuilding yard. The men employed in the workshops produced double the quantity they had done before; the men in the yard only produced the same quantity, but they both belonged to the same union.

Interference with the management stands on a different footing. The unions are wholly responsible for it, and there was a time when some very important trades were seriously threatened and damaged by their action in this direction. A wave of crude Socialism passed over them after the London dock strike of 1889, which brought some Socialists into notoriety and inspired others with ambition. It did not touch those unions where the reins were held by strong and level-headed men, but it had a considerable success, and caused a great deal of trouble for several years. The doctrine that labour has the right to own the means of production was assiduously proclaimed, but as realisation was found to be impracticable the next best thing was attempted and some unions sought to control the means of production in the interests of labour. It was this course of action which made such a profound impression in competing

countries, where nothing of the kind has been attempted and Socialism is merely talk and politics. It filled foreign unions with envy and foreign manufacturers with satisfaction, and no doubt if it had gone on they would soon have had the field to themselves, for no business can be successfully conducted in that way. They have not yet realised that it failed and is now virtually dead. With their backs to the wall the employers organised their forces, fought and won.

A form of interference which has often caused trouble arises from jealousy between unions, each seeking to establish a monopoly in a certain class of work. The employer who is quite indifferent what union the men belong to so long as they do the work, is made a party to their quarrels and expected to adjust his business to suit their arrangements. This vexatious action has been most common in the building and engineering trades, in which many analogous processes are combined and their assignment is to a large extent a matter of indifference. It has often led to stoppages and has undoubtedly increased the cost of production. It cannot be defended. Men have the right to combine and manage their own affairs, but they have no right to call in other people to make the combination successful or to secure its ends at their own expense.

The most flagrant example is the perennial conflict between the unions and free labour, and here public opinion is always against them because they seek to violate the first principles of liberty. If they cannot get men to join them, that is their own affair; they have no right to use force and still less to ask any one else to do their business for them. The blindness induced by partisanship in this matter is most instructive. The unions and their ardent partisans burn with contempt for those who will not join or who break away from them; it is expressed in such terms as "blacklegs," "scabs" and "rats". Employers and their partisans, on the contrary, see in them fine, honest, independent fellows, who are merely exercising an elementary right to sell their labour as they please. But when a combination of employers is in question the whole picture is turned round. To the unions the employer who does not join or who breaks away is not a blackleg, a scab, or a rat,

but a just, honourable, independent man; to the other employers he is a contemptible creature, who deserts his order in the hour of stress to benefit himself. To the looker-on it is six of one and half a dozen of the other. But the violence of organised against free labour has brought its own cure, and has much abated. Free labour has organised too in self-defence, with and without the assistance of employers. The free labour organisations were at first derided by the partisans of trade unionism. Having no knowledge of labour except that which they gained through the spectacles of some trade union leaders, they knew nothing of the deep and real resentment aroused by the intolerance and violence often exercised by trade unions, and did not believe in a genuine desire among working-men to resist them. Since the free labour organisations have continued to exist and flourish,[1] derision is not effective and the cue is to ignore them; but that is no wiser than the refusal of some employers to recognise trade unions. An obstacle does not cease to exist because you look the other way; the only result is that you run into it.

The great complaint, however, against trade unions, and particularly trade union leaders, is that they wantonly foment disputes for their own ends and to get themselves recognised. There has been some ground for it in the past, though less than is commonly supposed. The industrial Garden of Eden in which labour wanders, happy and innocent, under the protecting care of capital, until the devil enters as an agitator, and brings devastation on that fair scene, is a picture often painted, but seldom from life. And it is less and less often realised. As trade unionism becomes more fully developed and mature, the task of the leader is more and more the composing, not the fomenting of disputes. His difficulty is not in stirring the men up, but in keeping them quiet. The task is no easy one, and demands no common qualities. He stands between the precipice, the deep sea and the devil; he needs a cool head, a clear eye and a firm foot. He must satisfy an exacting,

[1] The last annual report of the National Free Labour Association states, that in thirteen years it has had the support and co-operation of 3,000 employers and 500,000 workmen. Over 19,000 workmen registered in 1904.

suspicious and often insubordinate set of men ; he must reconcile impossible aspirations with the facts of life ; he must be conciliatory with employers while firmly maintaining the interests of his clients ; he must keep an eye on public opinion ; and all the time he is liable to have the ground undermined beneath his feet by jealousy and intrigue. A man who can tread this razor edge, as some of our trade union leaders do to-day, commands our respect, and if he sometimes slips let us remember the insecurity of his foothold.

Turning now to the other side of the account and considering how trade unionism has benefited industry, I would first say it has an educative influence. The very essence of character and morality in conduct is the restraint of immediate impulses for the sake of eventual advantage, and organisation demands that. It demands a money sacrifice and a certain amount of discipline ; without these it cannot live. And the more developed it is, the more highly ordered and organic it becomes, the more it demands. In self-preservation it is compelled to discourage the shirker, the malingerer, the incompetent and the ruffian. Thus it raises the standard. I do not admit that trade unionists are the salt of the earth, and that non-unionists are beneath contempt. According to my experience there are two broad classes of non-unionists, (1) men too independent to combine, (2) men too weak and self-indulgent. The first class includes some of the very finest workmen, at least equal to any trade unionists. Their attitude is a matter of temperament which I well understand, because it is common among Yorkshiremen, who do not combine at all readily. I knew three men in a signal box ; two belonged to the union, the third would not. They were all good men, but he was the best of the three. His mates had nothing against him, they tried to persuade him, but in vain ; he was a man who liked to stand on his own feet —a "whole man," as the Germans say. That is the type I name. The other class are inferior as men and workmen, and they are far more numerous. If they join a union it elevates them.

I say, then, that trade unionism raises the standard of conduct. It also raises the standard of intelligence ; it

helps and almost forces men to take an interest in something besides beer and betting. It has also raised the standard of living by improving the conditions of labour. This is a controversial question, on which much argument has been wasted. It may be argued for ever on *a priori* grounds that trade unions can or cannot raise wages and shorten hours; but that is a barren exercise. Trade union effort cannot override economic laws, but within them there is abundant scope for action. The unions may hasten a change which is economically sound, but delayed; they may give it form and definition; they may extend its operation. And more than that; the stand made by organised labour is chiefly responsible for the gradual disappearance of the old idea that labour stands on the same footing as raw material and plant, and for the recognition of a human element, which is governed by different economic laws. That, in particular cases, wages have been raised, hours shortened and other factory conditions improved in response to trade union pressure is incontestable.

But the greatest service of all that they have rendered is the establishment of more stable relations between employers and employed. This is the great advantage in the matter that England possesses over her competitors at the present time, and it results from the higher development of organisation. It is not an artificial arrangement imposed from above nor the product of an idea or a sentiment, but an organic growth sprung from the interaction of needs and circumstances, and, therefore, a real thing possessing vitality and adaptability. The growth and consolidation of labour organisations have led to the formation of counter-organisations of employers, and from the clash of these opposing forces a new order of things has arisen in which collective bargaining on a great scale has taken the place of piecemeal haggling, and deliberation has been substituted for battle. It has reacted on both sides; it has taught mutual understanding and respect, and it has provided a machinery for adjusting relations in accordance with changing conditions.

This new order is by no means perfect or universal, but it prevails in a more or less complete form in most of the great industries—in mining, engineering and ship-building,

iron and steel, cotton, building, boots and shoes, brass-work, lace and dyeing. The form varies, and probably must vary, according to circumstances; but the principle is the same. The conditions are: a strong organisation on both sides, a standing basis of wage rates and other terms of employment, a joint board or committee formed on the principle of equal representation to review them periodically or as occasion may require and to adjust differences that may arise, with or without provision for arbitration in case of disagreement. Strong organisations are essential and the stronger the better; therefore trade unions are necessary to arrive at this state of equilibrium. It is noteworthy that in the pottery trade such a machinery was set up some years ago more than once and with a certain success, but it broke down because of the lack of organisation among the workpeople; trade unionism is very weak in that industry. They get on well enough without it, but the other is the more stable condition.

Its fruits have been strikingly displayed in recent times. Experience shows that labour disputes have usually been most acute in times of depression following inflation, when employers seek to lower wages and the employed resist. We have recently been passing through such a period, but never have so few disputes occurred. The cotton trade went successfully through a great crisis last year on account of a shortage of cotton; the mill-owners proposed to run short time and the unions assented; without them it could not have been done. The lace trade at Nottingham similarly passed through a crisis, with the help of the union. Large sections of the engineering and shipbuilding trades accepted reductions of wages, again through the offices of the union. The boot and shoe trade has been revolutionised in late years by the introduction of machinery, and that has been accomplished with the help of the unions. In all these and many more cases there would have been, in an earlier stage of trade organisation, prolonged, bitter and disastrous strikes.

The services thus rendered to industry cannot be estimated, but some idea of their value may be gained from the statistics of labour disputes in recent years. The following are taken from the last report of the Board of Trade:—

Labour Disputes in the United Kingdom.

Year.	No. of Disputes.	No. of Workpeople Affected.	Duration in Working Days.
1893	615	634,301	30,467,765
1894	929	325,248	9,529,010
1895	745	263,123	5,724,670
1896	926	198,190	3,746,368
1897	864	230,267	10,345,523
1898	711	253,907	15,289,478
1899	719	180,217	2,516,416
1900	648	188,538	3,152,694
1901	642	179,546	4,142,287
1902	442	256,667	3,479,255
1903	387	116,901	2,338,668
1904	334	83,922	1,416,265

The word "disputes" here means stoppages, but this use is a little misleading, for there are innumerable disputes which do not develop into stoppages. The figures given in the table do not show a diminution in the number of disputes so much as a diminution in the number developing into stoppages; it is a measure of the success attained in prevention, which is chiefly the work of the organised system described. It is as superior to external methods—arbitration, mediation, etc.—as prevention is better than cure. In 1903 788 cases were reported as having been settled by boards, or more than double the number of those which developed into stoppages. But no returns can show the real work done, for much never comes before any boards at all. In the cotton trade, for instance, causes of dispute arise every day and are settled out of hand by the secretaries of the two organisations without recourse to any board. The system is extraordinarily complete and successful in that great industry. There are three provincial districts: Oldham, Bolton and Blackburn; in each is a secretary representing the "masters" and a secretary representing the "operatives," as they are called in Lancashire. Any dispute arising in the district is referred to them; both have a consummate knowledge of the technical details, which are incredibly complicated and not understood by many of the men;

they put their heads together and come to an understanding, and there is an end of the matter. This goes on day by day. Very often the trade union secretary settles things direct with a mill without needing to consult his colleague; and it is only when they cannot agree, which is comparatively seldom, that a case is referred to the district joint committee. If the district committee cannot agree it is referred to the central joint committee at Manchester.[1] But that happens very seldom, and only in serious matters. The real work of agreement and conciliation is done beforehand, and finds no place in the returns.

But even when disputes go on to stoppages, they are most often settled by direct negotiation. The number so settled and by other means in the last five years is as follows: Direct negotiation, 1,746; arbitration, 91; conciliation and mediation, 63. Arbitration and conciliation have their uses, but they only act effectively when the parties are tired of fighting or one wants an excuse to give in, as in the great coal dispute of 1893, which was settled at the Foreign Office. An umpire, as a last resort, in case of inability to agree under a mutual arrangement scheme, is another matter; he is part of the scheme, and in some trades this provision works well.

[1] Here is a week from the diary of one of these secretaries chosen quite at random:—

Monday.—A spinner at Messrs. A. Bros. is spinning 36's on through tubes on weft gauge mules. He is paid ¼ of a penny per lb. for tubing, but the firm are deducting 1½d. per set for coarse counts. This is wrong. Will speak to Mr. H. (the masters' secretary).

Tuesday.—Mr. H. will get the tubing put right at Messrs. A. Bros.

Wednesday.—Went to Messrs. A.'s, Farnworth, *re* spinning odd counts. They stated that when they did this the orders were small. They promised to do as little of it as possible, and when they did do it would pay the men 2s. 6d. per week extra.

Thursday.—Low wages complained of on 42's pin cops at O. Mill. A complaint of bad spinning and bobbins breaking is to hand from our members at the M. P. Mill Co. Messrs. H. are threatening to discharge minders if a piecer happens an accident while cleaning back carriage wheels, although they will not allow the mules to be stopped to do it. Am to write the firm.

Friday.—Went to M. P. Mill and found the spinning bad. Rims are to be reduced one inch on weft mules. In the afternoon went to P. Spinning Co. to examine some spinning which the men had complained about. With the exception of a few pairs of Curtis's mules which were unsatisfactory, the rest were a fair average spinning.

The advantages of the English system of voluntary organisation thus reflected in the comparatively friendly relations of employers and employed, and confirmed by the statistical evidence, are illustrated by the state of things in Germany and America. Though both countries are better provided with means of arbitration imposed from above or from outside,[1] stoppages are more frequent and the feeling as I have said, entirely different. Trade unionism is still in a comparatively primitive state, and the industrial world is going, or about to go, through the convulsions from which it has emerged, or is emerging, in this country. In the United States, in particular, the spirit pervading the bulk of the trade unions and their methods of action are extremely crude and violent. When I was there I perceived that the industrial world was a huge volcano, groaning and travailing within. The signs were so obvious that I had the temerity to tell many employers, when they spoke with disgust of the unions, that the trouble they had had was nothing to what they were going to have. I believe that, so far, my prediction has been abundantly fulfilled. The recent troubles in New York, Chicago, Colorado and Fall River are merely the larger waves on a widely storm-tossed sea. Comprehensive information is lacking subsequent to 1900; but the record of Massachusetts, by no means the home of violence, is sufficiently instructive. The average number of industrial disputes in the twenty years 1881-1900 was 90 per annum. The lowest number was 15 (1881 and 1883), the highest 175 (1893), whereas in 1903 it was 207, and in 1904 (up to 30th September) it was 198; but the cases were more serious in the latter year. The number on strike and the working days lost were both higher. The report of the Bureau of Statistics states that, including the disputes pending, the total working days lost would aggregate 1,951,976, or more for a single State with a population of less than 3,000,000 than for the whole of the United Kingdom. One very large dispute,

[1] I purposely omit an account of the methods of arbitration, though I have very full information on the subject. It would take up more space than it is worth, in my opinion. Voluntary arbitration has a very limited application and compulsory arbitration is entirely opposed to the English temperament.

the Fall River cotton strike, was responsible for the greater part of this; but that is always the case. It is the few big disputes that swell the figures.

For the purpose of comparison I give the figures for the United States corresponding with those above for the United Kingdom so far as they are available:—

Labour Disputes in the United States.

Year.	No. of Disputes.[1]	No. of Workpeople Affected.
1893	1,610	287,756
1894	2,224	690,044
1895	1,585	407,188
1896	1,077	248,838
1897	1,249	416,154
1898	1,220	263,219
1899	2,120	431,889
1900	3,060	567,719

How far the English and American figures are strictly comparable I do not know, but they indicate the movement in each country. If the American returns were brought up to date they would indicate a far greater difference, for the period since 1900 has been one of increasing storminess. Several of the larger disputes have been attended with a violence unknown in England. It is due partly to the general spirit of lawlessness pervading the United States, partly to the heterogeneous racial elements composing American communities, and partly to the violent doctrines preached on behalf of labour. The trade union literature teems with all the old rhetoric about "oppressors" and "oppressed" which have almost disappeared from the grown-up trade unions in England, and the animosity against free labour is much fiercer. Their methods, including the notorious "walking delegate," the black-listing and boycotting of employers,

[1] The number of disputes is doubtful. Strikes are distinguished from lock-outs, and under the latter heading the figures relate to the number of establishments involved. The two are added together in the foregoing table.

are also very crude.[1] They want to rush everything and try to run before they can walk.

I found a general spirit of optimism prevailing, not so much among employers as among lookers-on, who were confident that the country would find a way of its own out of the trouble and astonish the world; but that is common form and means nothing. The trade unions are equally confident that they are going to astonish the world in the opposite way, and so far they have done more to fulfil expectations. Meantime attempts are being made to reconcile the warring interests of industry on the lines already trodden in England. Profit-sharing schemes are one; organisations of employers another. I have discussed the first in a previous chapter; experience points to the second as the more promising road in the immediate future. Mutual agreements with regard to wages and other conditions are now becoming common in many districts, and I suppose in time a more stable condition will be reached. But it cannot be rushed, and as yet it seems a long way off. Strong organisations are essential, as I have said, and there are exceptional difficulties on both sides. On the side of labour the racial mixture, the restlessness and the migratory habits of the people; on the side of capital the fierce competition for wealth; on both sides the vast extent of the country, which makes personal contact impossible, and personal contact is all-important for mutual understanding.

In Germany the conditions are different, but there, too, the record of disputes shows great and growing restlessness. It only begins with the year 1899:—

Labour Disputes in Germany.

Year.	No. of Disputes.	No. of Workpeople Affected.
1899	1,336 (strikes only)	109,460
1900	1,500 (strikes and lock-outs)	131,810
1901	1,109 „ „	62,682
1902	1,135 „ „	70,184
1903	1,501 „ „	99,414
1904 (ending 30th Sept.)	1,636 „ „	106,372

[1] That remarkable novel, *The Walking Delegate* (I forget the author's name), may be overdrawn, but it could not have been written at all of English trade unionism.

The building trades are responsible for a very large proportion—considerably more than a third—of the disputes but those involving the largest number of persons are, as elsewhere, in the mining industry.

The number of strikes shows the restlessness, the comparatively small number of persons affected shows that the unions are not yet strong enough to carry them on upon a great scale; but they are growing rapidly in strength, though disunited. It is the Social Democratic group which employers regard with most apprehension on account of the bitter and implacable propaganda with which it is more or less identified. Whether change be sought by way of legislative action or of industrial disputes the signs of the times are disquieting.

I cherish no illusions about the amicable relations of employers and trade unions in England. The interests of labour and capital are not identical and never can be. A manufacturing or other business concern may be likened to a band of robbers: the leader and his men have a common interest in securing the spoils, but when it comes to division their interests are also divided. Causes of strife may arise under any conceivable system, even when the wage-takers are also partners; for if an attempt were made to increase the dividend by docking their wages some of them would certainly suffer, unless all their holdings and all their wages were identical, which is impossible in a large concern. No doubt the further community of interest is carried the less likelihood there is of strife, and that is a great argument for "profit-sharing". But that system makes very little progress, and its general adoption is in a distant and nebulous future. Meanwhile causes of strife are very frequent, and sometimes they will and do issue in conflict. Industrial quarrels occur in cycles not only on account of fluctuations of trade, but by reason of changes in current thought and opinion, including public opinion, which often really decides the issue. The present comparatively quiescent stage has only been reached through severe fighting, of which the public has got thoroughly sick, but presently the lust of battle will arise again with younger men. Only the other day the good understanding was within an ace of breaking down in the cotton trade, in which it has lasted many years

and in which the machinery has been brought to the highest pitch of efficiency. That shows what may happen. Nevertheless it did not break down. A real advance has been made and something permanent has been gained which will not be lost, although crises may arise.

It is not an arbitrary creation, but an organic growth, as I have said, and to go back on the past will be impossible.

One great change in progress is that the unions are learning discipline, and the leaders are consciously teaching them. Not long ago one of the foremost of them said to me: "The task now before trade unionism in this country is to learn discipline". It was a striking remark and it indicates a recognition of responsibility which constitutes a real advance. The leaders of the greater unions are usually men of more knowledge, insight and judgment than the rank and file and they understand better the need and value of moderation and compromise; but their hands are often tied by their position and they have to swim with the stream before they can stem it. The Taff Vale strike was a signal illustration; it was a case of sheer insubordination. The head executive of the Amalgamated Society of Railway Servants was opposed to the strike, which really arose from the excessive suspiciousness of the men—a feeling which was not justified but which the other side did nothing to allay and much to inflame. I happened to know what was coming. The executive strongly disapproved of the action of the local union but did not feel strong enough to enforce discipline. The local men and their leader were like bolting horses which the driver cannot check until he has first "given them their heads". It was a costly failure, but the result has greatly strengthened the hands of the executives. Undoubtedly the judgment in that case has contributed to the recent diminution of strikes and largely through the increased control exercised by the governing bodies. It has placed more responsibility on them and responsibility entails authority. A notable illustration was afforded by the Amalgamated Society of Engineers in 1903, when the head executive sternly repressed insubordination on the part of the important Clyde district and insisted on their acceptance of a reduction of wages. In a circular letter to the

members, dated 21st May, 1903, the General Secretary wrote :—

> . . . A much-needed lesson has been given in maintenance of trade-union discipline, and it has been made manifest to all concerned that, at all hazards, the executive of the Amalgamated Society of Engineers has the courage of its opinions and is determined not to allow the society to be led on the rocks by irresponsible and inexperienced advisers.

No one knows so well as the leaders the need of discipline, and the Taff Vale judgment cannot be wholly unacceptable to them on reflection.

It is no part of my business to express an opinion on reform of the law, but the present uncertainty can hardly be considered satisfactory and some change is probable. Perhaps the unions are more disquieted than they need be about their position. Picketing is not always necessary to the successful enforcement of their rights, as was signally proved in the great coal struggle of 1893 ; there was no picketing and no weakening, though they actually starved, men, women and children. Perhaps, on the other hand, their armament has been rendered too weak for safety, which does not tend towards stable relations. Whatever changes are introduced, however, that which has been gained towards stability will not be wholly lost. Storms may arise, but they will be different ; troubles that are passed are passed, while for our competitors, sailing the same sea, they lie still ahead.

CHAPTER XV.

PAUPERISM AND THRIFT.

A STATISTICAL comparison of the amount and cost of pauperism in the three countries would be very instructive if it could be made; but, unfortunately, it can not. The material available is not sufficiently comparable. Having attempted it and failed, I am consoled by finding myself in good company. The statistical experts of the British Board of Trade, with all the sources of official information at their command, have met with the same experience.[1] But pauperism is too important a subject to be omitted altogether, and I propose to deal briefly with certain aspects of it which bear upon my subject.

Each country is confronted by precisely the same problems of pauperism. Everywhere there are several classes of needy or helpless persons—the aged, the sick, the infirm, the afflicted, the unfortunate, the idle, the juvenile. The community recognises the duty and assumes the burden of caring for them in different ways. It endeavours to cure or ameliorate the condition of the sick and the afflicted in hospitals, asylums and special institutions (for the deaf and dumb, the blind, etc.), and to educate the juveniles, who are orphaned, deserted or neglected children. With regard to those who are merely indigent from age, misfortune, incapacity or moral obliquity it broadly undertakes no more than their maintenance so that they shall not actually die of want. It is with this group—the simple paupers—that I am more particularly concerned; the first group has comparatively little bearing on my inquiry and there is no substantial difference in the methods pursued in the three

[1] *Second Series of Memoranda*, etc., 1904, p. 129. Such statistical comparison as can be made will be found in this Blue-book.

countries, save in respect to the system of State insurance in Germany, which has already been discussed. I further exclude charity or voluntary agencies. In dealing with all classes of needy persons the community employs both public and private agencies. The latter are exceedingly numerous and varied, and the amount of charity, from standing and from casual sources, cannot be estimated. But it is to be noted that the public and private agencies are to a great extent compensatory and apt to vary inversely. Thus it happens that in Germany, where the system of public relief is more thorough, there is certainly less private charity than in England and America; and this constitutes an important distinction. The amount of charity, endowed or other, is very great in some American communities, notably in Philadelphia; but on the whole, so far as I can judge, it is greatest in England. In particular, the hospital and home-nursing service maintained by voluntary contributions and endowments is very much more general and complete.

To come then to the public relief of ordinary indigent persons, there are some points of difference in the methods employed which require notice; they are analogous to those already discussed in connection with other subjects and pertinent to an international comparison.

England is the original home of State poor relief and still has the most coherent system. The poor law is uniform and based on clear principles with a symmetrical framework of administration. It consists of a central supervising board, forming a department of State, and local administrative boards elected *ad hoc* on a wide democratic franchise—the Boards of Guardians. For this purpose the country is divided into districts, called poor-law unions, which are distinct from the units of municipal government. The money is raised by local taxation and expended by the Guardians, subject to the control of the Local Government Board, which is exercised through a staff of inspectors. The Guardians are unpaid but they employ salaried officers, whose appointment and pay are subject to the approval of the central authority. The basis of practical administration is the "workhouse," an institution for the reception of destitute persons, supplemented by a greater or less amount

of relief given outside to persons who are not inmates. This scheme, originally established in 1834 and subsequently modified from time to time, has on the whole worked well; and it shows that the English people are capable of devising a methodical scheme on well-defined lines, though they seldom or never do it until they are obliged. They were obliged in 1834 by the breakdown of the old poor-law system, the gross abuses which it permitted, the enormous growth and burden of pauperism and the demoralisation of the people.

The new system was intended to remove these evils and it did so to a very great extent. The effective element in it was discrimination, which is the essential condition of successful relief in any form. It was a very simple and elementary kind of discrimination, revived from the ancient poor law, but much better than none at all; it restored the test which had been allowed to lapse in the eighteenth century through the corruption and laxity, which means laziness, of the administrators. The guiding principle was the separation of the really needy from the merely idle by the workhouse test, which rendered the conditions of persons in receipt of relief less desirable than that of persons supporting themselves. In 1844, outdoor relief to the able-bodied was forbidden with some defined exceptions; if they came to the community for assistance they had to enter the workhouse. Under this system the proportion of persons receiving outdoor relief to the total population fell progressively from 5·4 per cent. in 1849 to 1·4 per cent. in 1900, while the total amount of pauperism—indoor and outdoor—fell from 6·2 to 2·1 per cent. of the population. The change was not, of course, wholly due to the poor-law system, but in a large measure it was; outdoor relief fell progressively while indoor relief fluctuated with the state of trade but maintained about the same mean level throughout the period.

Recently, however, there have been signs that the system is breaking down. The workhouse test has failed to check vagrancy, and in some unions outdoor relief has grown to unmanageable proportions. Many changes have taken place since 1834, both in external conditions and in public opinion. The size of urban communities has enormously increased, the standard of living has risen, the

poor-law administration has become much more democratic through changes in the law, humanitarian sentiment has become more diffused and the economic lessons of the past have been forgotten. All these changes have tended in one way or another to a gradual disregard of the principles re-established in 1834 and to the growth of indiscriminate relief. Advantage has been taken of a Regulation Order, issued in 1852, which relaxed the prohibition of outdoor relief to able-bodied persons in the largest centres of population, and such relief has been extended in some localities beyond the point contemplated by the law or provided for by the administrative machinery.

The objection to outdoor relief lies in the difficulty of discriminating between cases where it may be of advantage to the community by tiding worthy persons over a period of misfortune and those in which it injures the community by encouraging the unworthy. The machinery for this essential discrimination is totally inadequate when the number of applicants is large. It is supposed to be carried out by paid officers, called relieving officers; but they are far too few for the purpose in any populous union where the guardians readily grant outdoor relief. All the shirkers and loafers apply for it, discrimination becomes a farce and the system breaks down. The habit of asking for assistance grows by indulgence, the laxity becomes known and attracts applicants from less easy-going districts, the poor-law machinery is overwhelmed, and the ante-1834 state of things recurs.[1]

It recurs in another way. Laxity breeds demoralisation among the administrators as well as the recipients; and corruption, both of officers and guardians, follows. It must not, however, be supposed that these faults are universal. The greatest diversity of practice occurs; in some unions outdoor relief has been abolished, in others it is virtually indiscriminate.

The failure of the system has been accentuated since 1900 by the increase and continuance of unemployment,

[1] Cases of gross abuse frequently come to light. For instance, a woman was robbed by a lodger of £60 savings; when the case came into court it was found that she had been in receipt of outdoor relief for years, and had saved the money out of it.

which now presents a very grave problem. The real difficulty again is discrimination, for which no machinery exists. In the winter of 1904-05 a voluntary scheme was organised in London for supplying it and for distributing relief in the form of work, with a certain amount of success, and this has since been placed on a statutory, if provisional, basis by Parliament. Power is given to municipal authorities and boards of guardians to take joint action, in co-operation with charitable agencies, in providing work for the unemployed. It is a momentous step, the effect of which cannot be foreseen. It practically establishes a new authority outside the poor law, and goes a long way towards recognising the right to work. England took the first great step in Socialism as far back as 1601 or earlier, when the State definitely recognised the "right to subsistence"; it has now virtually taken the second step and recognised the "right to work," not under the poor law, but outside it. Its success must depend on adherence to the principle of the workhouse test; that is to say, relief work must be on the whole less desirable than the regular market. If not, the community will in a short time be called upon to provide work for unnumbered hordes, who find it easier to apply to the authority than to look for work themselves. That is what happened in the short-lived experiment made in Paris in 1848, and it is what the unemployed are being taught to demand. It can only end in a total economic breakdown. Apart from individual cases of misfortune "the unemployed" in the mass are always the least capable section; they are the unskilled casual labourers and the less efficient skilled ones who are the first to be turned off. If they are to receive "trade union rates" of wages for the go-as-you-please sort of work which is all that can be got out of them, they will be living upon charity in greater ease than the more industrious and capable, and wholesale demoralisation must result.

This is in the future and rather outside my subject, but it is a corollary to the breakdown of the poor law and shows the direction in which things are drifting. A Royal Commission has been appointed to inquire into the whole subject, and none too soon.

In the United States pauperism is dealt with on the

same lines as in England. I have often seen it stated or implied that there are no paupers in that country. This erroneous belief is probably due to American dislike of the word; the thing is usually concealed under the general term "charity". The euphemism is characteristic and leads to great confusion, for poor-law relief and charity are essentially different; the one implies a recognised public obligation, which cannot be repudiated, the other is merely a favour. As a matter of fact there is a great deal of pauperism in the United States; in some large communities there is even as much as in corresponding ones in England and possibly more. The elements of the population are similar, their occupations are the same and their surrounding conditions only differ in being somewhat more primitive. Tramps are very numerous.

"American poor law is based upon English poor law,"[1] and its methods are broadly the same. Both indoor and outdoor relief is given, and the fundamental institution is the almshouse, as in England, though it is on a much smaller scale. Each State, however, makes its own laws and there is, consequently, great diversity both of law and of administrative machinery. To enter into the varieties would be tedious and is unnecessary; but two or three broad points of difference between the English and American systems are worth noting. The bodies or persons entrusted with the administration in the United States are not elected *ad hoc*, but are nominated or appointed and are generally the holders of various other public offices; the administration of the poor law is mixed up with the management of philanthropic institutions and charities; there is no official supervision by a Government department, but instead of it two forms of central control exist in some States: (1) a State board of control, which is an executive, not a supervising body, (2) a board of charities, which is a supervising not an executive body, and consists of unsalaried persons.

The result of all this is a state of great confusion and an absence of any definite guiding principles. The whole thing is in an inchoate stage of development, without form or structure, and with its various elements undifferentiated.

[1] Professor C. J. Bushnell in *Modern Methods of Charity*, by Charle Richmond Henderson.

The resulting inconveniences and abuses are making themselves felt, as the problem of pauperism becomes more pressing, whether by reason of numerical increase or of a growing consciousness of needs; dissatisfaction with the existing chaos is finding expression, the necessity of more method is being realised and its attainment made the subject of serious study.

Germany, as might be expected, has long since applied such study to the problem, and has evolved a widely different system of her own. Its essential features are so characteristic that they cannot be omitted from any survey of that country, and it is chiefly on their account that this chapter has been introduced.

The State recognises the obligation of providing for the needy, but confines its direct action, save in cases of public disaster, to regulating and supervising the means, which are left in the hands of the local community. The guiding principles of the poor laws are the moral duty and the political expediency of (1) preventing need, and (2) mitigating its effects; but there is no such uniformity as in England either in the laws themselves, which differ in the several States, or in the machinery of administration which differs according to locality. There are boroughs, rural unions, estate districts and mixed districts; and they administer the law according to local conditions. Such variations, however, are of minor practical importance; they allow for a certain elasticity in the application of guiding principles, but the principle is the main thing. This is characteristic of Germany and a remarkable feature of German methods. The country of regulation by law, above all others, it yet does not lose sight of the end which regulation is intended to effect or allow the means to become an end in itself, which is so constantly done in England. That is one reason why regulation by law is in Germany less irksome in real life than it appears to be on the surface.

The great difference in practice between the German system of poor relief and those of England and America lies in the exercise of much more careful discrimination in the treatment of different classes of needy persons. It is rendered possible, in the first instance, by the system of "papers," which provide a means of identification lacking

in England and America. The respectable poor can produce their record, and thus assist classification. German subjects must produce proof of their nationality, and strangers in any locality must show where they come from. There is something to go upon, whereas with us there is nothing but the applicant's own statement, which may be totally false. The recent increase of distress in England, and the attempts that are being made to deal with it in a more scientific and methodical manner, point to the adoption of some form of documentary identification as a basis of classification. It has even been suggested on the part of the trade unions that only members should be entitled to the relief work which is provided under the scheme mentioned above. Such a restriction is quite impracticable, because the great majority of those requiring relief do not belong to a union; but the suggestion is interesting as showing the direction in which events are driving a people naturally averse from the interference with individual liberty implied by "papers". Of course, the trade unions have themselves long adopted "papers," for the union card is nothing else. Something of the kind is indispensable to a really scientific system; the only logical alternative is to abolish outdoor relief, extend the workhouse to "labour colonies" on the land, and leave the rest to organised charity. That has the merit of simplicity, and would be easier to carry out than the German system, of which the main features are as follow:—

The local poor-law authority is eventually responsible for the support of those needy persons only who have a legally defined claim on it. The claim is conferred by birth in the locality, by two years' continuous residence, or, in the case of a woman, by marriage. Current relief given to other persons is recoverable from the union they come from, except in the case of illness of dependent persons at work for more than a week in the place, or of apprentices. In such cases the charges for the first thirteen weeks cannot be recovered, but are defrayed by the union where the illness occurs. Strangers coming into a place may be turned out if unable to provide themselves either with housing or maintenance, or if they do not possess the capacity or the means to procure a livelihood. Needy persons also, who

require support for other reasons than a temporary incapacity to work, may be returned to their own parish. The claim to relief does not constitute a legal right; it merely imposes a duty on the community. The relief embraces shelter, food, medical care and burial. It does not relieve relations, husbands, fathers of illegitimate children, and other persons legally responsible from any of their responsibility. Further, the law carefully distinguishes between voluntary and involuntary causes of destitution, and it seeks to prevent pauperism by punishing misconduct which conduces to it. The following are liable to imprisonment: (1) tramps; (2) beggars and those who do not restrain their children from begging; (3) those who do not restrain them from theft, smuggling and poaching; (4) those who bring themselves or persons dependent on them "upon the rates" by gambling, drink, or idleness; (5) who shirk the duty of maintaining those for whom they are responsible in spite of an official order; (6) who refuse to do work given them when in receipt of public support; (7) who fail to obtain work in a given time. We have nothing corresponding to the last class, the "culpably houseless"; and, generally speaking, the German law is much more severe on voluntary or intentional pauperism than our own. They have a capital word—"work-shy"—which is equivalent to "born-tired"; and in dealing with the unemployed are accustomed to distinguish this class. They are certainly very successful in suppressing the tramp or "hobo"; I have only once seen one. I think that their attitude in these matters is a conspicuous illustration of that discriminating intelligence which is probably the most valuable and distinctive quality of the German mind. They do not mix things up. Recognising that moral responsibility is the very foundation of society, they distinguish clearly between the culpable and the unfortunate, and do not allow sympathy with the latter to shelter the former, after the fashion which is causing so much embarrassment in England. Nor does this clear-sightedness entail any hardness of disposition. On the contrary, I have no hesitation in saying that, if there is in Germany less giving in the way of direct charity, there is more general recognition and fulfilment of personal duty towards the poor than in England or America.

The system embraces both indoor and outdoor relief, but the latter is far more extensively developed. It is thought more advantageous to keep the family together and to restore those who are able to support themselves at all, but have fallen into difficulties, by timely assistance than to encourage them to become total burdens on the community. Complete maintenance in a poorhouse is reserved for the comparatively few, who, by reason of age or infirmity, are totally unable to help themselves and have no other resources.

The workhouse, therefore, is not the fundamental institution and the workhouse test is replaced by investigation, which is effected in towns by the famous Elberfeld system of outdoor relief. This is the most salient feature of the treatment of pauperism in Germany.

A brief reference to it has already been made in the description of Elberfeld. It is applied by dividing the union into districts, and subdividing the districts into beats; each beat is in the charge of a visitor or almoner, who is a citizen of the town and unpaid. The division is so made that each beat contains from two to four cases requiring relief and no more; and it is the duty of the visitor to make himself personally acquainted with their circumstances. As an illustration I may as well take Elberfeld, where the system has been in force since 1852. In 1901 the population was 157,000, the number of districts 37, and the number of poor-beats 518; the average number of cases of outdoor relief was 41·92 to a district and 2·28 to a beat. The number of citizens gratuitously giving their services was 564, and they represented the following callings: manufacturers and merchants, 215; architects, engineers, builders and other employers, 167; officials, teachers, doctors, apothecaries and lawyers, 146; landed proprietors, 10; other persons of independent means (*Rentner*), 26. In 1903 2 lady visitors were also appointed with a roving commission. In Dusseldorf there were 18 lady visitors. The almoners are nominated by the town authority, and are obliged to undertake the allotted duty. They pay periodical and regular visits to their quarters and investigate cases of need. In this they command the assistance of poor law medical officers employed by the corporation. An almoner finding a case requiring assistance through illness or disablement

sends a form to the district medical officer, who examines the case and fills up the form stating whether the individual is (1) permanently, or (2) permanently but only partly, or (3) temporarily incapacitated, and from what cause. The almoner may give a certain amount of relief on his own discretion, and larger amounts are passed for a limited time by a general meeting of the almoners of the district; but the eventual grant rests with the central committee of the town, to whom claims are submitted by the almoners. The committee is wholly business-like, and the almoners have to prove their cases. Thus philanthropic impulse is reconciled with the dispassionate examination of facts demanded by responsibility to the public. Of course everything depends on the administration; and about that I can only say that they are very well satisfied with it in Elberfeld after an experience of fifty years. It entails no small sacrifice on the part of busy professional men, and their firm adherence to it is a striking illustration of the strong sense of public duty entertained in Germany. In 1903 I found that many of the almoners in Elberfeld had performed this service for over twenty years, seventeen of them for over thirty years, and two for over forty years. During the fifty years' experience there the annual cost of the outdoor relief has varied from 10½d. to 1s. 9½d. per head of the population; the average cost during the last ten years has been 1s. 6d. per head. The average number of persons in receipt of outdoor relief for the last ten years has been 7·28 per 1,000 of the population. Relief is given in money and in kind, in the shape of food, clothing and bedding. Out of 2,269 cases relieved in 1901, nearly one half—1,072—received money alone, 139 received goods alone, and the rest received both.

Such is the system, excluding minor details, in Elberfeld itself. It has, I believe, been adopted with or without modifications in all the large towns in Germany, except in Alsace-Lorraine, which has different poor laws from the rest. Its essence is exact knowledge of the circumstances in each case, secured by minute subdivision of the inquiry work among an adequate staff of unpaid relieving officers, who are responsible citizens drawn from all classes. If the supply is inadequate, investigation cannot be properly carried out, and the system breaks down. That was the

case a few years ago in Hamburg, where an older system, but based on the same principle, had been in operation from an early period. Individual almoners had too many cases to deal with, and laxity followed. In 1892 a modification of the Elberfeld plan, adjusted to the conditions of Hamburg, was adopted. So too in Berlin and some other great cities. Instead of having regular and nearly equal beats the almoners are at the disposal of a district superintendent who allots cases at his discretion. This is more elastic and better suited to very large towns.

The system has not always or everywhere given satisfaction, and critics are not wanting who would prefer the institution of the workhouse and the abolition of outdoor relief. But that principle, as we have seen, has to some extent broken down in England, and recent movement has been in the opposite direction. My own belief is that the German system is more advantageous to the community, by keeping the home and the family together and preventing the temporarily unfortunate from sinking into permanent pauperism.[1] But it is only possible through the voluntary aid of a large number of persons; administration by a paid staff would be far too costly. Even in Germany the cost is very high and rising. But that is a general experience. The burden tends constantly to increase with the rising standard of living. What were considered superfluities become necessaries. It is said—and I have no doubt truly—that the workmen's insurance, though it may diminish the cost to the community in some respects, has increased this tendency, wherein we may see merely another illustration of the fact that civilisation means preservation of the unfit—whether they be invalids, paupers, lunatics, cripples or criminals. In Germany the cost of pauperism has risen somewhat more rapidly than elsewhere, as the subjoined table will show, and so has the standard of living.

[1] A considerable number of those temporarily assisted refund money advanced on regaining their position. In Hamburg over £10,000 was so refunded in 1901.—Henderson

PERCENTAGE CHANGES IN EXPENDITURE PER HEAD OF POPULATION ON POOR RELIEF.[1]

Average of Triennial Period of which Middle Year is—	United Kingdom.	Germany (Berlin, Bavaria, and 15 Towns).	U.S.A. (New York, Massachusetts, and Minnesota).
1885	81·3	73·0	82·1
1890	80·4	77·8	94·6
1895	88·9	89·7	101·5
1900	100·5	100·0	98·3

The differentiation which characterises German pauper methods extends also to the indoor relief. The almshouses, as I have said, are reserved for the aged and infirm, and are comparatively small. The following figures, giving the number of inmates at the end of 1901, together with the population, in a few of the chief industrial towns, will sufficiently show the part played by this factor in German civil life: Düsseldorf (217,500), 666; Chemnitz (208,500), 132; Elberfeld (157,000), 249; Aachen (136,300), 406; Crefeld (108,908), 129. The discrepancies here shown must not be taken to indicate the relative prevalence of pauperism in the several towns so much as differences in the method and means of dealing with it. In some towns the public poorhouse is supplemented by others on a religious foundation. Crefeld, for instance, has two, with 86 inmates, of whom the town paid for 68. The workhouse paupers, therefore, were 197, not 129. For the sake of comparison I give the number in some corresponding English unions at the end of 1901: Sheffield (229,441), 2,031; Bradford (228,667) 1,125; Oldham (215,624), 1,033; Blackburn (223,520), 959; Rochdale (120,433), 761. The Düsseldorf workhouse comes nearest to the English type; it is called "institution for aged and incapacitated persons of both sexes"; at the end of 1901 it contained 309 men, 324 women, and 33 children.

[1] *Second Series of Memoranda*, etc., Board of Trade, 1904. The table only shows the movement in cost for each country; the figures must not be taken to indicate the relative actual cost in each.

The German almshouse has neither a hospital department nor a casual ward. Pauper patients go to the general hospitals, and are paid for by the town; the expenditure on this head is a large item. Casuals are otherwise disposed of in different ways according to their character. Tramps and beggars are liable to penal treatment, as I have already said; they are sent to jail or to a workhouse, properly so called—that is, a house of correction—with a view to reclamation. For other houseless persons provision is made in various ways both by public authorities and philanthropic agencies, but on no regular or uniform plan. The most extensive institution of the kind is the "relief station," where destitute persons on the road can get food and lodging, and are generally required to perform some work in return. They correspond most nearly to the English casual wards. In 1896 there were 1,287 such stations, but the number is diminishing. There are also night shelters and travellers' homes, which serve the same purpose.

Beyond these are the labour colonies and labour registries. They are not under the poor law, but have a considerable bearing on pauperism. The object of the labour colonies is, broadly, to give able-bodied men who have sunk into destitution an opportunity of recovery. The earliest was founded in 1882 near Bielefeld by Pastor von Bodelschwingh, and there are now 33 of them, with accommodation for 4,000. Resort is chiefly had to them in winter.

The labour registries or employment offices are becoming a very material factor in the prevention of pauperism. They are intended to relieve unemployment by providing a medium of exchange between employers in want of hands and persons out of work. Several kinds exist, but the most important are the general registries maintained either by municipal authorities or by voluntary associations, supported by employers, private persons, philanthropic bodies, chambers of commerce, etc., and often subsidised by the municipality. There is a tendency towards the taking over of voluntary registries by municipalities. The growing use made of them is shown by the following figures for Prussia:—

PUBLIC LABOUR REGISTRIES IN PRUSSIA.[1]

Year.	Applications for Situations.	Situations Offered.	Situations Filled.
1897	176,000	145,321	104,332
1898	213,391	181,385	122,128
1899	260,130	242,070	160,643
1900	341,402	272,701	185,917
1901	426,279	262,035	191,848
1902	498,624	294,391	221,263

The utility of registries depends, in the first instance, on the joint use made of them by work givers and work takers, as the Germans properly call them; and, in the second, on the inter-communication between registries in different localities. Both these conditions are as yet imperfectly fulfilled, but as the value of the institution is recognised improvement proceeds. A complete network of registries with a complete system of interchange would probably do more to prevent or mitigate unemployment than any other institution.

From these brief outlines it will be seen that Germany is considerably more advanced on the road towards a scientific treatment of pauperism than England or America. It is still very imperfect and not a little confused; various agencies—poor law, municipal and philanthropic—are mixed up without any definite lines of demarcation. But there is a firmer and more general grasp of essentials and differentiation is more developed. Both in England and America several of the institutions mentioned, such as night shelters, farm colonies and labour registries, have been adopted in a tentative way, and great interest is taken in such matters; but humanitarian impulse and a vague desire to "do something" are much more conspicuous than any real grasp of the problem. Institutions are copied in response to some outcry without any real understanding of their nature and purpose. Exception must be made of the Charity Organisation Society of London, which applies the

[1] From *Report to the Board of Trade on the Unemployed in Foreign Countries*, by D. F. Schloss, 1904. This report contains full details.

lessons of experience to philanthropy and has been extensively copied in the United States: but the suspicion and dislike with which it is regarded by large sections of the people indicate the general preference of impulse to reason. The broad difference with the Germans is that they put more brains and more trouble into the task; and in particular they think it a good investment to apply both to the prevention of pauperism. Hence the State insurance and the poor law outdoor relief, which must be taken together. They are largely responsible for the absence of misery and squalor in the mass, which strikes every observer, as compared with England and the United States.

Thrift.

Thrift is even less susceptible of statistical comparison than pauperism. The channels are so numerous and varied, and information about some of them is so scanty, that a summary statement is impossible. In addition to savings banks, friendly, co-operative and building societies, trade unions and insurance of different kinds, there are investments, hoarding, house ownership and innumerable little clubs for the purchase of various things. About some of these information fails altogether, about others it is defective; and even if the pecuniary amount of thrift which they represent were known the class of persons is not, or but very roughly, save in the case of trade unions. I am obliged to content myself with broad conclusions derived partly from the study of such statistics as there are, partly from observation and inquiry. I give them for what they may be worth.

Savings banks are, I suppose, the most direct form of thrift after the domestic stocking, which is presumably dying out, and they constitute the largest single item. The following table shows the amount per head of population standing to the credit of depositors at three periods:—

AMOUNT IN SAVINGS BANKS PER HEAD OF POPULATION.[1]

Year.	United Kingdom.	Germany (Prussia, Bavaria, Baden).	United States.
	£ s. d.	£ s. d.	£ s. d.
1881	2 6 0	2 16 10	3 12 5
1891	3 0 7	5 2 6	5 5 11
1901	4 12 7	8 3 3	6 19 4

As a measure of thrift the table must be used for comparing the movement in each country rather than the actual amount. The striking thing is the great relative increase in Germany. The proportional amount has trebled in three years, whereas in the United Kingdom it has just doubled, and in the United States, which started from a higher basis, it has fallen short of doubling. Figures for the whole of Germany are not available for the earlier years, but in 1901 the corresponding amount was £8 8s. 0d., which is still more favourable. The facts only prove that the increase of deposits in savings banks has been much greater in Germany than in the United Kingdom or the United States, and that the proportional amount now standing to the credit of depositors is considerably higher there than in the United States and very much higher than in the United Kingdom.

Further inferences must be a matter of opinion. My own is that the savings banks figures do represent approximately the relative degrees of thrift attained in these three countries. The late Registrar of Friendly Societies for the United Kingdom, in a paper on the subject read before the British Association in 1904, returned the total amount of savings in the several institutions coming under his purview at £360,000,000, of which five-ninths, or £200,000,000 were in savings banks. The rest were thus distributed:—

	£
Building Societies	62,000,000
Friendly Societies	43,000,000
Co-operative Societies	40,000,000
Trade Unions	5,000,000

[1] *Second Series of Memoranda*, etc., Board of Trade, 1904.

The list does not exhaust the savings in the United Kingdom, but even as far as it goes it shows that savings banks are only one item and that other agencies represent perhaps as much, or nearly as much, in the aggregate. I do not forget that. But those other agencies exist in Germany and America too, and some additional ones besides, notably the compulsory sickness and old age insurance in Germany. The several institutions vary in importance, no doubt; trade unions represent a much larger sum in this country, and co-operative societies are of small account in America; but on the other hand, the building and loan associations are far more developed there; in 1901 their assetns amounted to over £121,000,000.[1]

But figures do not of themselves give any real insight, because they tell nothing of the persons who save or the class to which they belong. From the rather meagre information concerning depositors in savings banks, it is evident that a large proportion do not belong to the "working-classes," but it is not possible to say what the real proportions are. We have to fall back on inquiry and observation. The result of my own is to leave no doubt in my mind that thrift is much more diffused among the working-classes in Germany and somewhat more in America than it is here. We have some very thrifty work-people in England, particularly in the north. I know of mill-hands in the West Riding of Yorkshire, where the people are, I think, more careful than anywhere else, who have saved as much as £1,000; but the bulk of the English working-classes do not know what thrift is. They live from week to week or from day to day and never think of attempting to put by anything. When money is plentiful they spend it at once; when it is not, they are in difficulties. Very often they spend it before it is earned; a man who has received 30s., 40s. or 50s. on Saturday wants an advance or "sub," as they call it, on Monday. And it is not only that they do not attempt to save, but they squander the money they have in the most reckless fashion. Their habitual waste and extravagance would bring a middle-class household to ruin. The wretched state of so many homes is due far more to expenditure on drink, betting, women and amuse-

[1] *Bulletin of the Bureau of Labour*, No. 55.

ments than to lack of means.[1] The multitude of pawnshops, which live on improvidence, is alone strong evidence of the habits of the people.[2] The contrast afforded by the poor Jews is another proof. Improvidence is shown not only in the mis-spending of money, but in the habitual waste of food, fuel and clothing to an astonishing extent. In all these respects the poor fairly compete with the rich, whose example they faithfully follow and frequently surpass.

Now in the same classes in Germany, improvidence is the exception and thrift the rule. It is taught and it is imposed. A large part of the State insurance is a form of compulsory thrift, as I have pointed out, and compulsory savings banks are general in connection with factories, workshops and other establishments. The home is usually conducted with the utmost economy and everything is made to go as far as possible. This also is taught, and is in a sense, compulsory. Wasteful habits are not acquired, because the people cannot afford to waste what they have got. They are not wealthy enough, nor is the country. The classes above set a better example in this respect than in England.

In the United States there is the wealth and it undoubtedly leads to a great deal of waste and extravagance of living. The rich set as bad an example as they can. Ostentatious extravagance is the one road to distinction open to them, and the microscopic record of their doings purveyed to a servile public makes their example more conspicuous than in any other country. High wages also permit and encourage extravagance in the working-classes, and of the women it may be said that they are brought up to extravagance. The revelations of Mrs. Van Vorst[3] regarding factory girls, their reasons for seeking employment and their expenditure on dress, merely bear out the impressions derived from less intimate observation. But

[1] Mr. Rowntree's inquiry into poverty in York produced the following numerical results: Number of persons living in "primary" poverty (insufficient means), 7,230; number living in "secondary" poverty (sufficient means but mis-spent), 13,072.

[2] In Germany they are conducted by the municipal authorities, and there is only one even in large towns.

[3] *The Woman who Toils.*

there are some counteracting forces. Life on the land, which still plays a large part in the social economy of the United States, tends to a lingering hold on the older virtues. Money is never wrested easily from the soil except in placer gold diggings ; the difficulty fosters an instinct for sticking to it, and the life gives little opportunity for throwing it away. Then there is a large leaven of thrifty races—Jews, Germans and Scandinavians—coming in, and they do not all lose their virtue. The very extravagance of the women, again, imposes a certain amount of prudence on the men. But more important than any of these is the atmosphere of social aspiration. The desire to "get on," which is such a powerful stimulus to prudence in the lower middle classes in England is stronger in America, and it permeates the working-classes as it does not in England. In order to "get on" a man must work hard and exercise prudence, and they do it. Saving, I learnt from English workmen there, is practised more than at home.

CHAPTER XVI.

ELEMENTARY EDUCATION.

The subject of education is so vast and complex that I find myself compelled to treat it in the most summary fashion, and to select from the results of a laborious study only those points which seem to have a direct and substantial bearing on my subject, avoiding details as far as possible. I am freer to do this in dealing with education than with most other subjects on my list, because it is so very fully treated in official and other publications. Those who make a special study of it are acquainted with the details or know where to find them; those who do not will be glad to be spared them. Moreover, I am not so much concerned with the educational apparatus in general as with what is important in the differences between the three countries. It is not necessary for me, therefore, to lay out in full the entire groundwork—the law, the organisation, the management, curriculum, and so forth—which would indeed occupy many volumes; it will be enough for my purpose to pick out the most salient features, and I shall confine myself in the main to elementary and technical education.

There is or has been up to now a fundamental difference between England on the one hand, and Germany and America on the other, in regard to the general education of the people. The two latter countries have for a long time had State education based on a principle or an idea; England has only just established it. The causes of this difference are historical and I need not enter into them at length, but I wish to point out the nature of the difference, which does not seem to be clearly realised.

It is the difference between public and private education. In the former, the State or the community pays; in the

latter, the parents or, if it is gratuitous, the body which carries it on. And "he who pays the piper calls the tune". In a private school (including, of course, the expensive private institutions called "public schools" in England) the parents usually pay, and they choose the kind of schooling they wish for their children. It is a commercial business like any other, based on supply and demand. This fact is perpetually forgotten in the recurrent controversy about the English public schools—Eton, Harrow, Winchester, Rugby, etc. Whatever may be the faults of the education they offer, it is supplied in response to a demand. The parents, who pay, want a certain article, and they think they get it. If they did not they would go elsewhere. If they wanted a different article the schools would modify themselves (as they do) to meet the demand, or others would spring up. As a matter of fact the demand for the education supplied is so great that these worthless institutions (so they are denounced) are continually increasing in number and size, and it is more and more difficult to get a boy into them at all unless he is clever or has had his name on the list for years.

I use this class of school as an illustration. The personal views of the parents, who pay, really determine the kind of education given, and the requirements of the community are not directly considered. When schools are carried on more or less gratuitously, as they all once were, by religious or other bodies, those who conduct them give the kind of education they think fit. The parents may sometimes have a certain option between rival establishments, or attention may be accorded to their wishes; but whether this be so or not the guiding influence in the philanthropic, as in the commercial establishment, is of a private character and the immediate object is to give effect to the views of individuals or sections of the community. They have their own principles or ideas, and apply them at their pleasure.

When, however, the community itself pays the piper and therefore has a right to call the tune it substitutes, nominally at least, for such private or sectional principles its own views of what is desirable. The aim is changed; it is no longer what some person or body desires, but what

will benefit the community as a whole. Thus it becomes necessary to formulate some principle or idea on which national education is to be based in the interests of the community at large. England has only just reached this point. Down to 1870 elementary education was virtually private; it was conducted by religious bodies, with some State aid and State supervision, and parents paid a small fee. Increase of population and of requirements gradually rendered the provision inadequate in some localities and it was supplemented by schools provided at the public cost and administered by local boards elected for the purpose. The aim of the new schools was different from that of the old, but no principles of national education were formulated; there was only a sort of compromise between the traditional sectarian ideals and the vague purpose of bodies representing the general public, but hardly conscious of their functions and often totally unfitted to perform them. This half and half state of things continued down to 1902, when a great step towards a homogeneous national system was taken by abolishing the school boards and placing all the schools under the ordinary local authorities, while preserving a certain distinction between the two classes of schools in regard to management. This step has been accompanied by the recognition of a national aim in education and the formulation of guiding principles by the central authority. But they have not been sufficiently long in operation to produce any effect.

Both in Germany and the United States popular education was here and there undertaken by the community from an early date and both have long since developed public systems with national ideals. Their ideals are not the same; they differ in some very important respects, but both have consciously in view the welfare of the community as a whole apart from sectional or personal predilections; and that constitutes a fundamental distinction between them and the English system hitherto maintained.

I do not mean to say that a private or sectional system may not ultimately have in view the welfare of the community. It generally has; and may, indeed, come nearer to realising it than a national or communal system. But it identifies the general welfare with some particular end of

its own, which is only a means but becomes to it the real and immediate end. Thus a religious body, believing the inculcation of certain doctrines to be the only true basis of national welfare, makes them a cardinal and essential point in its school system, an end in themselves. It may be quite right; but the community which includes other religious bodies and independent elements has a different point of view. It looks beyond such teaching and regards it as a means, which may be approved or not.

The United States.

What is or should be the ultimate aim of national education? Undoubtedly the national welfare, and that would undoubtedly be best attained by so training the children as to get out of each child in mature life the best service of which it is capable, or (alternatively) by preparing each child to perform, in the best way, the functions for which it is best fitted. No system fulfils this ideal or anything approaching to it; but the fundamental principle of national education in America—equality of opportunity—is in accordance with it and does form the basis of a true ideal. This is the distinguishing feature which chiefly impresses strangers, and rightly so; it is truly American and the outcome of that democratic spirit which is still the life-blood of the American people. The school is, indeed, its chief stronghold and perhaps its last hope. "To-day Home and Church are visibly disintegrating,"[1] and the State—well, no one pretends that public life, any more than private, is moving towards the ideal democracy.[2] There remains the school, and to it thoughtful Americans cling passionately. Writers on education have the word democracy for ever in their mouths; and the university, which is the coping stone, has been defined by one of the most distinguished of them as the prophet and priest of

[1] *American Schools*, by William Estabrook Chancellor, p. 321.

[2] "It is not to be expected that many people in any generation of the near future will be able to dream dreams or to see visions of an age of opportunity for all, of freedom from handicaps by birth, of entire absence of all inherited or government based privileges of property or station, and of equal justice at law and before the bar of public opinion" (*loc. cit.*).

democracy.[1] They look to the school with faith and hope, tempered by no little misgiving. This identification of the school with democracy is, I believe, the chief cause of that keen interest in education which has struck so many observers. The interest is not so general as some of them have supposed. Mr. Chancellor, writing from a large experience, says:—

> The efforts that have been made in the cities of the United States to interest the fathers of the school children in the schools have usually proven fruitless. The American father, whether a business manager or a clerk, a mechanic or manual labourer, is seldom deeply concerned for the educational welfare of his children. He is too busy to attend to these matters. The American mothers likewise are usually too busy with home affairs to interest themselves as a class in even those matters lying outside of the home that are as near to the home interests as are the affairs of the schools (*American Schools*, p. 292).

The general drift of his book is to emphasise the opposition encountered by the school superintendent and the difficulty of getting people to take a real and intelligent interest in education, and the standing complaint of educationists is the niggardly attitude of the public. Still I have no doubt that more interest is taken in the United States than in England, where a large proportion of the working-classes simply hate the schools and a still larger proportion of the upper classes take no interest in them at all except to grumble at the cost. So far as I can judge, more general interest in education is taken in Germany than in either country; and the school attendance testifies to it. But the distinguishing thing in America is the passionate interest taken by thoughtful men and the permeation of their views with the idea of democracy.

An ideal, however, is one thing, its realisation another. Some attempt is made to realise the democratic ideal of "equality of opportunity". Elementary schooling is everywhere free and provision is made for continuing it up through the higher grades. According to the Commissioner of Education's Annual Report for 1901, the age up to which free attendance at public schools is allowed in the several States is as follows: No limit, two States (Massachusetts and Connecticut); 21 years, 29 States; 20 years, 7 States;

[1] *The Trend in Higher Education in America*, by William Rainey Harper, President of the University of Chicago.

18 years, 4 States; 17 years in the district of Columbia and Texas; the rest indeterminate or unknown. Considerable and increasing use is made of the privilege of prolonging free education beyond the elementary stage. In 1901 there were 558,740 pupils receiving secondary instruction (high school grade) in public schools, and 89,933 students receiving higher education in public universities and colleges, professional and normal (teachers' training) schools.

Here is something done towards neutralising the accidents of birth and perhaps it is as much as education alone can do. One can understand the admiration of English trade unionists who have at home lacked the "educational advantages" to which they feel themselves entitled by nature. But it is less in reality than it looks. Power to utilise the opportunities offered still depends on home circumstances, and there is no guarantee that those who possess it are the ones most likely to profit by it. The great bulk of the children proceed to earn their living the moment they reach the elementary age limit and not infrequently before. Moreover the equality which the public school is intended to secure is to a considerable extent countermined by private schools, which give a superior education in the higher grades. The following figures show the relations :—

Number of Pupils in Public and Private Schools, U.S.A., 1901.[1]

Grade.	Public.	Private.
Elementary	15,061,721	1,261,672
Secondary	558,740	177,260
Higher (Universities, etc.) . .	89,933	149,904

The private elementary schools are chiefly maintained by religious bodies, and the great majority are Roman Catholic.

The public institutions giving higher education are chiefly State universities, agricultural colleges and normal schools. The number charging no fees at all is very small, but a good many charge merely nominal fees.

A great many parents who can afford it prefer to send

[1] *Annual Report of the U.S. Commissioner of Education.*

their children to the private school, and that tendency seems to be growing although contrary to the national ideal. The picture of the statesman's or millionaire's son at the same bench with the labourer's has a touch of the shop-window about it. As for the highest education, which is given at the older universities, it appears to be much less within reach of the poor than Oxford, Cambridge, or any German university. Thus the accidents of birth re-assert themselves, and the ideal fades. As a "capacity catcher"—and therefore conducing to the ultimate aim of national education—it is quite possible that the ladder formed by a generous but judicious system of scholarships is superior to the door nominally open to all but really closed by circumstances; for some go in who cannot profit and others who might are kept out. The selective agency is wrong, and it is shown by the significant fact that the female students outnumber the male in the public high schools by 3 to 2.

So much for the principle of equal opportunity and the extent to which it is applied. I have taken it first, because from the point of view of national education it is, in itself, a step nearer the ideal than either Germany or England has attained. But of course its effect depends not only on the extent to which it is applied, but also on the manner; that is, on the kind of education given. Probably the clearest way of continuing my comparison will be to deal with that at once and then return to the other countries.

I do not find evidence of any clear or general conception of what education should be in the United States beyond the general principle of equal opportunity. There is no national system with a definite aim, although there is national education based on a definite principle. This distinction does not appear to be at all understood. The United States Commissioner of Education observes that visitors always come to Washington and ask for the laws and regulations controlling the American system of education. That is so, and they will continue to do it because they are always given to understand that there is a national system, implying some degree of centralisation and homogeneity. But beyond what I have said there is no national system. There is free education for every child for a period of years varying at the commencement from four to eight

years of age and at the conclusion from seventeen to no limit. There is no uniformity even in the one common feature; and beyond it the only general conception is a vague idea that "school" is necessary for producing good American citizens and putting boys and girls in a position to "get on" in life. The manner in which these very indefinite aims are pursued varies indefinitely in every detail. I do not mean to say that such primitive ideas are the only conception of school education. On the contrary, its nature and purpose are nowhere made the subject of more earnest and elaborate discussion than in professional circles in the United States. The Commissioner of Education has formulated the following general definitions :—

> The school is the auxiliary institution founded for the purpose of reinforcing the education of the four fundamental institutions of civilisation. These are the family, civil society (devoted to providing for the wants of food, clothing and shelter), the State, the Church. The characteristic of the school is that it deals with the means necessary for the acquirement, preservation and communication of intelligence. . . . The difference between the part of education acquired in the family and that acquired in the school is immense and incalculable. . . . The education of the family is in use and wont and it trains rather than instructs. The result is unconscious habit and ungrounded prejudice or inclination. . . . But the school lays all its stress on producing a consciousness of the grounds and reasons of things. I should not say all its stress, for the school does in fact lay much stress on what is called discipline—on habits of alert and critical attention, on regularity and punctuality and self-control and politeness. But the mere mention of these elemen s of discipline shows that they too are of a higher order than the habit of the family, inasmuch as they all require the exertion of both will and intellect consciously in order to attain them. The discipline of the school forms a sort of conscious superstructure to the unconscious basis of habits which have been acquired in the family.
>
> School instruction, on the other hand, is given to the acquirement of techniques; the technique of reading and writing, of mathematics, of grammar, of geography, history, literature and science in general. . . . The mastery of the technique of reading, writing, geography and history lifts the pupil into a plane of freedom hitherto not known to him. He can now by his own effort master for himself the wisdom of the race. . . . The school gives the youth the tools of thought.[1]

The accomplished Commissioner possesses no administrative jurisdiction, but he is here speaking officially for educational America, and doubtless he fairly represents its views. Similar utterances are widely current. We find constant

[1] *Monographs on Education in the United States*, No. 3, by William P. Harris, United States Commissioner of Education.

references to the four (or five) "fundamental institutions" of civilisation and to the demarcation of their provinces. The school is here essentially the portal to knowledge, with the discipline of routine thrown in; its province is "self-culture" or "self-direction". The Americans are very fond of these and similar high-sounding terms, but they do not contain much practical guidance in the treatment of children. So far as a precise meaning can be given to them, they suggest a narrow function for the school. There is nothing here about duty or obedience or character, nothing about bodily needs; the whole ethical and physical sides of education are apparently either relegated to the home and the church, or are supposed to be implicitly involved in the acquisition of knowledge. They are not directly contemplated as a primary function of the school.

With indefiniteness of aim and lack of central guidance or control it is not surprising to find enormous discrepancies in the methods. Each State makes its own laws and regulations, and though some are sufficiently alike that they can be grouped, there is no uniformity, even in primary and essential points. I have mentioned the age-differences to which the one universal provision of free attendance is subject. Its complement, compulsory attendance, exhibits far greater discrepancies. I read in a recent account that the lowest age up to which children must attend school is thirteen years; but, as a matter of plain fact, to be read in the official reports, more than a dozen States have no compulsory attendance at all, and I have been in some of those States. It is a very important matter from the industrial point of view, because of its effect on juvenile labour; and an account of education in America which does not take cognisance of it is seriously misleading.[1] In the other States, which have compulsory attendance, the age at which it begins is seven (10 States) and eight (23 States); the age at which it ceases varies from twelve to sixteen years (7 States), in the great majority it is fourteen years.

The length of the school year—another important ele-

[1] Personally conducted visitors to a country see, and are intended to see, the best. That is quite right and very instructive; but they should not forget the limitation or ignore it in reporting what they see.

mentary point—varies to an extraordinary degree. Hardly any two States have the same. The average number of school-days in the year 1900-01 was 144·2 for the United States, and it ranged from 76·1 in North Carolina to 191 in Rhode Island. Thus we have two important cotton manufacturing States ; the one has no compulsory attendance, and schools open on the average for less than three months in the year, the other has compulsory attendance from seven to fourteen years, and schools open for thirty-two weeks. The average number of days actually attended by each pupil in North Carolina was only 44·6, equivalent to about seven weeks. What sort of a "national system" is that? North Carolina is at the bottom of the list, but there were 27 States in which the average attendance was less than 100 days, or between three and four months. Again, in some of the most advanced communities, the school accommodation is insufficient, and some of the children have to be taken in morning and evening shifts, thus reducing the nominal day to one-half.

These things are not pointed out in a spirit of depreciation ; they are elementary facts in the situation, and must be noted if it is to be represented with any approach to accuracy. I shall have to mention other discrepancies presently. But perhaps enough has been said on this head to enable the reader to apply the necessary qualification to the phrase "the American system of education". We can pass on to some points of administration.

In spite of the discrepancies a tendency towards greater uniformity is visible, and a form of administration is being developed in the leading communities, not identical, but similar in essentials. The central figure is the school superintendent, a superior officer who has all the executive threads in his hands, and stands between the schools with their staffs, the governing body, which finds the money, and the parents. The governing body is a board of some kind representing the local public, but constituted and elected in various ways. Its relations to the State and to the schools also vary. The State legislature is supreme within the State in regard to education ; it makes the laws and it finds some of the money. The State government may also exercise a varying amount of control through a State board of

education. According to Mr. Chancellor, State control and centralisation are increasing, and the jurisdiction of the local board is becoming confined to finance, the provision of buildings, salaries and so on, while all the executive details, such as appointment of teachers, choice of text-books, arrangement of curriculum, and so forth, are left to the superintendent and the staffs. The superintendent is appointed by the board for a short term of years, three or four; and he has a seat on it. Under him he has, besides the teaching staff, "supervisors" for special subjects. His relation to the board is likened to that of an attorney to his client by Mr. Chancellor, to whose interesting book the reader is referred for further details.[1]

The teaching staff is, by universal consent, a weak point in American schools. The vast majority of the teachers are women. In 1901 the numbers were: female, 306,063, male, 123,941—total, 430,004; and the preponderance is increasing rapidly. The percentage of male teachers was 42·8 in 1880, in 1900 it had sunk to 28·8. The reason, or chief reason is that women are cheaper, which does not quite bear out the account given by English panegyrists of the boundless generosity and enthusiasm for education of the American public. The cry of American educational workers is that the schools are starved, and principally in the matter of teaching staffs. The average annual salaries paid in all the States reporting in 1901 were: male teachers, £114; female, £96. In the United States this is hardly a living wage for persons having any appearance to keep up; but a general average does not tell much. The standard varies in different States as widely as any other condition. The average for male teachers is highest in Massachusetts with £338, lowest in North Carolina with about £60. Nothing surprises one in North Carolina, but the singular thing is the great difference shown by northern and not dissimilar States. Thus against £338 in Massachusetts, Maine has £85, Pennsylvania £108, and Ohio £96. The causes of difference are no doubt various; one is the relative proportion of urban and rural schools, a second the superior development of higher education in some States, a third the varying

[1] *American Schools*, by William Estabrook Chancellor.

length of the school year and a fourth seems to be the source of revenue. Funds are obtained from local taxation, from the State, from permanent funds and "other sources"; and the proportions differ enormously. Thus the proportion from local taxes in Massachusetts is 97·2 per cent., in North Carolina it is 1·4 per cent. For the United States as a whole the proportions are: State, 16·4 per cent., local taxes, 68·6 per cent., permanent funds, 4·2 per cent., other sources, 10·8 per cent. Salaries seem to run higher as a rule where more money is obtained from local taxation.

The salaries just given apparently include those of teachers in the higher public schools and consequently they cannot be compared with those of teachers in elementary schools in other countries; but it is clear that the salaries of many elementary teachers in America are excessively low. One result of this and of the great preponderance of women is much "wastage" of teachers. Teaching is taken up for a time as a stop-gap, and many of the women marry. The same thing happens in England; in neither country is teaching a standard profession such as it is in Germany. But in the United States a large and increasing number of teachers receive professional training. In 1901 nearly 15,000 teacher graduates were being sent out every year. The total number of students pursuing training courses for teachers enrolled in various institutions, public and private, was 94,157; there were 170 public and 118 private "normal" schools with 43,372 and 20,030 students, respectively.

Professional training is more developed than in England, but it is neither so complete nor so thorough as in Germany, and the quality of it has been strongly criticised. Nevertheless teachers are, as a rule, very zealous and imbued with enthusiasm.

Co-education is the rule in the Central and Western States, but less general in the urban schools of the older States. The merits of the system are a disputed point on which I have not sufficient experience to offer an opinion; but the apparent results do not inspire any wish to see the American plan adopted here, and so far as I can learn that is the effect produced on most Englishmen.

Corporal punishment is regarded with disfavour, and in many communities it is only permitted under rigid restric-

tions. In one State and in several other cities it is forbidden. The most unruly children are sent to special institutions. Truancy is common.

With regard to school buildings they are better warmed than ours but not superior in other respects. As in factories, too little attention is paid to light.

With regard to curriculum it is virtually the same as elsewhere, and the only points that require notice are the teaching of patriotism and of temperance and the non-teaching of religion. Much stress is laid on the first, both in text-books and in school routine, and it is a potent factor in the Americanisation of the very large foreign juvenile element. The teaching of temperance is vitiated by the use of text-books containing statements which everybody knows to be false. The gradual dropping of religion is a feature of the utmost importance. It is said that "the religious difficulty" has been "disposed of," and that is true. There is no religious question in the public schools, and no religion. Dogmatic, that is denominational, teaching was given up to appease sectarian animosities and Bible reading substituted; that has been quietly dropped by degrees and the foundations of Western morality have, in effect, disappeared from the public schools. *Pari passu*, attendance at Sunday schools has dropped off. It is easy to dispose of the religious difficulty by disposing of religion. In like manner the education difficulty is disposed of in the Andaman islands.

With regard to results it must be remembered that the task of the public schools in the United States is unique and of peculiar difficulty on account of the mixed nationalities. In many communities two-thirds of the children are of foreign and often illiterate parentage. They go to school as a rule from seven or eight to fourteen years, though evasions of the laws relating to school attendance and employment are very numerous. For the younger children kindergartens are extensively developed in many cities, and for older ones evening schools, which are attended by those employed in the day. They are particularly numerous in New York, Philadelphia and Boston. The first essential is that the children shall be fitted for the privilege of American citizenship by acquiring the language,

to read and write, and learning to appreciate the flag and what it stands for. These two objects are well attained. The course turns the children out good Americans and reduces illiteracy to a low point, considering the character of the population. It also sharpens their intelligence and fosters ambition. The common school must be credited with a large share in producing the commercial success of the United States by fostering the qualities which conspicuously contribute to it. An exceptional amount of attention is paid to arithmetic, which perhaps accounts for the exceptional bent for business as compared with industry. American trained children in towns do not take to hand labour, which is mainly performed by foreigners; they go by preference into shops and offices. The notion that American education turns out better workmen is a delusion; but it does turn out keener men of business.

There are some obvious defects. One is the general American weakness of accepting a showy pretence for a solid article. Children are taught to repeat things which have no real meaning to them in the attempt to arrive at knowledge which is beyond them by a short cut. "The evil of memorising words without understanding their meaning or verifying the statements made in the text-book . . . is perhaps the most widely prevailing defect in teaching to be found in the schools of the United States" (United States Commissioner of Education). I happened to witness an illustration which impressed me. I was taken to see the best school in a very great city, and among other things I heard a lesson given by the head teacher (a woman) to the head class, composed of superior boys and girls of about fifteen. It was in mensuration, and they were using a text-book full of technical terms, such as oblate and prolate spheroids, horizon and parallels. The children mumbled in a painfully slovenly and indistinct way, and it seemed to me they had not the slightest idea of what they were talking about. I said to the teacher: "Do they understand the meaning of these words?" "That is just what I am going to take them on," she said, and turning to the class, "Now, what do oblate and prolate spheroids mean?" No answer. "Get out your dictionaries." All the dictionaries came out. "Read out the definitions." A boy standing up

read them out. It was no more than was in the text-book and added nothing to their knowledge, but everyone was satisfied. I said to her: "But do they know why these words mean that?" She did not know herself, and the subject dropped perforce; the lesson was pretentious make-believe. Yet she was a good teacher—the best he had the superintendent said—and very much in earnest.

The ethical results of schooling give much food for thought. It would be impertinent in a foreigner to endorse the searching and often scathing criticisms of American education and its results, which it is the right or duty of American leaders of education to make, but he is bound to note the utterances of such men as President Eliot of Harvard University, President Harper of Chicago University, President Stanley Hall of Clark University; not faddists or alarmists, but thoughtful and experienced men, who have the greatest faith in American education and in the future of the country. It is not mere opinion on their part, they point to results, to the corruption in public life, the growth of lawlessness, violence and juvenile crime, the increasing prevalence of divorce, the taste for foolish, false and degrading literature, for immoral and unwholesome amusements, to the want of reverence and the failure of the churches. There is great uneasiness about the moral health of the people revealed by these and other symptoms. Has an education devoid of an authoritative basis of morality nothing to do with it? "We cannot teach duty or the spirit of obedience. . . . A rapidly progressive ignorance of the very Bible we profess to revere. . . . The percentage of juvenile crimes and the average age of first commitment grows steadily earlier."[1] Have these things no connection? "Home and Church are visibly disintegrating," says Mr. Chancellor, and surely that is rather a serious prospect. How can the schools be acquitted of all responsibility if they are to be credited with any influence at all? It is playing with the question to attribute to them everything good and to exonerate them from everything bad in American life. "There is something fundamentally right," says

[1] *Adolescence*, by G. Stanley Hall, p. xvii.

President Harper in a tone of subdued regret, "in the German usage which includes religion as one of the subjects of study from the earliest stages of the child's educational development."[1]

Now it behoves us in this country to study very carefully the object lessons offered by our neighbours in this matter, because the choice of following one direction or the other lies at this moment before us. I pass at once to the case of Germany.

Germany.

Elementary education in Germany presents a most striking and instructive contrast to that in the United States. In the development of national schools Germany was chronologically ahead, and in the completeness of her national system she is still ahead now. But it is based on an entirely different idea. Americans are fond of laying stress on the "vertical" structure of society in the United States as compared with the horizontal structure in Europe, meaning that they have not the division into social classes which exists in the older world. As regards England the difference is not nearly so great as they suppose; they exaggerate the importance of class distinctions here and minimise their own class distinctions which are considerable and increasing. But as regards Germany the comparison is valid, though there too the distinctions are being relaxed. Men of mark in commerce and industry have an honourable position though they be neither "born," nor in the government service, nor university graduates; and it is open to any man to rise to the top in commerce or industry. Still caste remains and education is conditioned by it. The organisation varies in minor details in the different States of the empire, but the plan, the aim and the methods are virtually the same.

It is essentially a State system. The State possesses jurisdiction and exercises more or less control over all educational establishments, public and private, from the bottom to the top, because it is held to be the duty of the State to see that the national welfare is secured by the proper bringing up of the young. There is therefore cen-

[1] *The Trend in Higher Education*, by William Rainey Harper, p. 70.

tral control vested in a Ministry of Education, a government department which is sometimes combined with others. The universities are immediately under the Minister, but his jurisdiction over the schools is exercised through local departments representing the government, but differing for different classes of schools. The classes of public schools are (1) elementary; (2) middle; (3) higher; and these again are subdivided. I cannot enter into any details concerning the middle and higher schools, but it must be understood that the word "public" does not carry the same meaning as in the United States' educational vocabulary. These schools are under public control and are supported from public funds; the teachers are members of the civil service of the State, but the schooling is not free; it is intended for and utilised by children in superior classes of life. Even elementary schooling is not everywhere free; it is not in Saxony, where parents pay a small fee amounting to 5s. or 6s. in the year, but if they are totally unable to pay it may be remitted. In general they have to provide books and other things required.

Elementary education is, however, compulsory throughout Germany from six years up to an indeterminate age, which is in practice usually fourteen. Individual school liability may cease before that age, at the discretion of the district or local inspector, if the child has reached the standard deemed sufficient. All children are required to have this schooling, and if they do not receive it elsewhere to the satisfaction of the State they must go to the public elementary schools. About 95 per cent. of the children of school age are taught in these schools. That is to say, the great mass of the people receive their elementary education there.

The aim is clear, precise and practical. The function of the elementary or people's school (*Volksschule*), concisely defined, is "to train up the young in religion, good conduct and patriotism by education and teaching and to instruct them in the general knowledge and the acquirements requisite for civil life". This definition gives the key to the whole educational scheme. Character and conduct are the primary objects, then love of country, then such general knowledge as will enable the child to take its part in the

ordered life of the community, whether as man or woman; and, after that, the special acquirements, including physical development. Religion, therefore, comes first, as the indispensable foundation of morality and conduct. The German people have decided that morality cannot be efficiently taught apart from religion, and, further, that religious teaching, to be effective, must be dogmatic. For this the law carefully provides. The schools are denominational and separate for Roman Catholics and Protestants, except where there are not enough children of one confession to form a separate school; in that case they are mixed—*paritätische* or *Simultanschulen*—but the children receive religious instruction from teachers of their own confession. In 1896 there were in Prussia 680 such schools, principally in Posen and West Prussia; in a few towns all the schools are mixed. In many towns there are also separate Jewish schools, and occasionally one or two of some other sect. In all cases they are on a footing of equality before the State and the law, which ordains religious teaching but leaves the choice free. The instruction is divided into (1) biblical history; (2) catechism; the latter, of course, is dogmatic. Each has so many hours a week given to it; as a rule three to biblical history and two to catechism. In Evangelical schools both are taught by the teachers; in Catholic schools biblical history is taught by the teachers and catechism by the clergy. I give these details, partly because they are not known out of Germany and partly because of their significance in the educational scheme, which can, I think, hardly be over-rated. Just as the Germans have known how to retain the classical element in their higher education while adding the highest developments of science and other modern studies, so have they known how to build up the most complete system of national education upon the old foundations of character and conduct. They have not flung away the old in acquiring the new, but have combined them. The retention of systematic religious teaching has a far-reaching influence on the national life, which is plainly visible in many directions, and not least in the industrial sphere. To it may be traced the sense of duty and responsibility, the respect for law, the steady effort, the self-restraint, the maintenance of a higher ideal

than the materialism of Social Democracy, which have been noted in previous chapters. And to these may be added the striking absence of corruption in public life, which is the indispensable condition for the healthy exercise of those municipal functions that are carried on upon so large a scale in German towns to the benefit of the community.

It is impossible for any student of these questions to avoid contrasting the state of things in Germany and the United States. The former is strongest precisely in those moral qualities in which the latter is conspicuously and increasingly weak, and it is also impossible not to connect the difference in some measure with the two ways of "disposing of" the religious difficulty in the schools. The one has preserved religion, the other thrown it away. I suppose no one, whether for or against, will contend that religion is of no account as a factor in school teaching. The question is generally argued on theoretical grounds; I refrain from that and say, Look on this picture and on that. It is contended by opponents of religious teaching that, in spite of it or because of it, the German people are pre-eminently given to freethinking. If this means that they are pre-eminently irreligious, I challenge the statement. The intellectual classes are pre-eminently given to speculation about everything, but to infer irreligiousness from that is a most shallow and superficial judgment. Freethinking is one of those things that make a noise out of all proportion to their size and importance. Time and again it has been supposed to be sweeping everything before it in this country and in that; but it has died away and passed into oblivion. It is difficult to gauge popular feeling about religion and easy to be misled by surface signs, which leave the great invisible bulk of waters beneath absolutely unmoved. I have already said something about this in the chapter on Trade Unions in connection with Social Democracy, and will repeat my conviction that the mass of the German people are God-fearing; nor can I help attributing it in a large measure to the maintenance of real religious teaching in the schools. In the public schools of the United States the child is taught to be its own god, and the results are becoming patent. In these last years all the world has wondered at the Japanese

and their moral strength. Mr. Lafcadio Hearn has told us the secret; it lies in the maintenance or revival of their ancient religious cult, which permeates the life of the people through and through.

I have dwelt on the religious teaching at some length, because it forms the basis of the German scheme of education.

The other subjects of instruction are the German language, arithmetic, with elements of geometry drawing, history, geography, natural history and singing; also gymnastics and drill for boys and domestic handwork for girls. Great attention is paid to the language. The children are taught to speak, read and write correctly; and particular pains are devoted to secure clear enunciation and good pronunciation. Thoroughness is the great aim, quality not quantity of accomplishment. The standard of handwriting attained is remarkable. Altogether the scheme of instruction carefully avoids the ambitious and fanciful; it aims at the thorough mastery of elements rather than a smattering of extras, and as there is no competition for grants the children need not be crammed.

The teaching staff is one of the strongest points in the German system. The teachers are trained in seminaries, of which there were in Prussia 129—120 for men and nine for women—in 1901. The course there lasts three years and is carried out in three classes, but the training really extends over six years, as the seminary is preceded by three years in preparatory institutes, which are maintained either by the State or by municipalities. In Saxony the whole six years are passed in State training colleges. Qualification for appointments is obtained by examination at the close. In addition to the systematic preparation for the career thus secured the efficiency of the teachers is promoted by their recognised position. They have the duties and rights of civil servants, and as such enjoy various privileges, including partial exemption from liability to military service and from municipal taxes, as well as an assured and sufficient income and a pension. The average annual salaries paid in Prussian schools in 1901 were –in towns, male teachers, £120; female, £80; in the country –male, £84 13s.; female, £66. The salaries of the great bulk of the urban teachers range from £75 to £180; 201 received

over £255. The bulk of the rural teachers receive from £60 to £135. Three-fourths of the teachers are male.

The official position has, further, a moral value in Germany which it lacks with us. It carries with it a dignity and respect which in an educated man generate self-respect and self-confidence, the opposite of self-assertion. The German elementary school teacher has no need of self-assertion and consequently does not teach it—that bane of our elementary schools. He is somebody, has a definite social standing, though it may be humble, and takes a pride in his work. These moral factors count for more than syllabuses or examinations. The impression gained from observing class-work in operation is that the teachers are extremely well qualified for their work and take great pains with it. I am pretty certain that German children are of slow rather than quick intelligence; time and patience are required to ground them thoroughly, and these are given. The proportion of conscripts unable to read and write is constantly diminishing. In 1900 it was only ·1 per cent. in Prussia. A very weak point is the size of the classes. The limit for single-class schools is 80, but this is sometimes exceeded. For other schools it is 70, or in some places 60. On the other hand, each class has a room to itself. In the towns the schools have mostly six or seven classes, and the average number of children in a class is about 40 or 50.

The school year begins at Easter, and varies from 40 to 46 weeks. The holidays, which occur at midsummer, Michaelmas, Christmas, Easter and Whitsuntide, take up eight weeks in the country and nine in the larger towns. They are somewhat longer in Southern than in Northern Germany. The school week ranges from 20 hours in the lowest classes to 32 in the highest. Attendance is remarkably regular and punctual, and there is very little truancy. In the upper classes boys and girls are separated as far as possible; co-education does not find favour in Germany. Corporal punishment is allowed, but teachers are directed to administer it as sparingly as possible. The law runs as follows:—

Only after repeated and unsuccessful application of one of the former punishments (reprimand, standing out, detention after school, etc.) or on account of flagrant disobedience or gross misconduct, is a moder

poral chastisement permitted, but always in a measured form and so as not to be injurious to health. The corporal punishment of girls is to be avoided to the utmost.

The school buildings are regulated by law with respect to height of rooms, cubic space, and other matters. Great attention is paid to ventilation, warming and light, and in these respects the newer schools, in towns at least, are excellent. I have previously noted the value attached to good lighting in factories; it is the same in the schools. The Germans appear to me to have realised more than most people the very simple facts that a bad light spoils the eyesight by straining accommodation, and that a good one greatly increases efficiency by diminishing the expenditure of nerve energy on mere perception and consequently releasing it for other work. I have not seen a large number of spectacled children. So far as one can make a general statement from a limited field of observation, I should say the school buildings are plain and unpretending, but adequate and well adapted to their purpose.

Administration is a little complicated. I have already explained the central control, which is exercised over elementary schools through the provincial government. The important executive officer is the district inspector, who corresponds in many respects to the superintendent in the United States, with this important difference, that he is a Government official. His functions are more than supervisory; he wields authority over the internal management of the schools in his district, the teaching, discipline, and so on. Under him is a local inspector for each community in the district, who acts as chairman of the school committee representing the local authority. The constitution of the latter varies, but in towns it is generally the municipal authority. The cost is chiefly borne by the community out of local taxes, with subsidies from the State; the share of the latter is shown with other details in the following table.

Statistics of Elementary Schools in Germany, 1901 (about).

Public schools	59,348
Teachers, male	124,027
Teachers, female	22,513
Children enrolled	8,924,779
Total expenditure	£20,954,600
State contribution	£6,033,650
Expenditure per scholar	£2 7s.
Private elementary schools	643
Children enrolled	41,328

But the account of German elementary schooling does not finish with the *Volksschulen*. There is no provision for free higher grade schooling, no "equality of opportunity"; but the education of the masses does not end at this point. There are continuation schools, of which some account must be given.

At fourteen the children leave the elementary school after eight years' schooling, divided into three grades, and begin to earn their living. Some, indeed, do that earlier. I have already mentioned that in 1901 there were 9,454 children under fourteen employed in *Fabriken*; and a very large number, sometimes at quite an early age, are further employed at home or in business other than *Fabriken*. A law was passed in 1903 regulating both these classes of employment. Broadly, however, the normal course is for boys and girls to go to school till fourteen and then to work either at home, helping their parents, or in business. In trades where apprenticeship obtains boys are apprenticed; in others boys and girls are taken on at a low wage—say, 2s. 6d. a week—and work their way up as they grow and acquire the skill. They learn their trade in the place where it is carried on, which is the only place where it is or can be properly learnt. But in order to prevent their forgetting all they have learnt in school, which they readily do, and to promote their mental development in the same direction, continuation schools have been established, where they get a few hours' instruction in the week from fourteen to sixteen, seventeen or eighteen years of age. There is no uniformity about these schools, which have been developed out of voluntary efforts; they are different in towns and on the land, different for boys and girls, and different again in different States, being compulsory in some and not in others. I confine myself to those bearing upon industrial life. In Saxony and some other States continuation schools are compulsory throughout the State for boys from fourteen to seventeen; in Prussia they are optional; that is to say, local authorities have power to establish them and make them compulsory. The use of this power is gradually extending; at present the schools are most developed in Nassau. The boys attending them are mostly learning or exercising a trade, whether a handi-

craft or work in shops or factories. The object kept in view in the schools is twofold: (1) to continue their general mental development, (2) to help them to become efficient in their trade.

As Düsseldorf is one of the latest towns to adopt these schools, it may be taken to illustrate their aims and character according to the most recent ideas. The bye-law establishing the schools and authorised on 10th December, 1901, provides that all apprentices and youthful workers engaged in every sort of trade, including commercial business, in the town are bound to attend the continuation classes on the days and hours appointed until the end of the school half-year in which they complete their sixteenth year. If they fail to reach the standard required, the liability may be prolonged for another half or full year. Only those are exempted who can produce evidence to the satisfaction of the school committee that they possess the knowledge and acquirements which it is the aim of the school to impart. Youthful workers, apprentices, etc., who have passed the school age may be admitted as voluntary pupils on payment of the school fee, with the consent of the committee. Employers are bound to contribute 1s. 6d. quarterly for each scholar employed by them of school age; voluntary scholars pay the same. Scholars are bound to attend regularly and keep the rules, under a penalty of 20s., or three days imprisonment. The latter has been applied in two or three cases. Parents and guardians are bound not to keep boys from coming, and employers are bound to let them leave off work in good time to attend school; both under the same penalty as above.

There are, therefore, both compulsory and voluntary classes, and to these must be added a third branch—namely, drawing classes for boys, which are also voluntary. The compulsory classes are the most important. In their arrangement the calling of the pupils is the guiding principle. They are held in the elementary schools. The hours are in all cases six a week—namely, from 5 to 8 p.m. twice a week, except for the barbers and bakers, whose hours are 2 to 5 p.m. No compulsory classes are held on Saturday. The voluntary classes are held on Sunday morning, 9.30 to 12.30, or in the evening, 7 to 9, on one or two days in the

week. The subjects of instruction are drawing, arithmetic, reading, composition, book-keeping, knowledge of social legislation, and other matters bearing on the rights and duties of the lads as members of the community. For instance, they are instructed in the labour laws, the legal relations of employers and employed, workmen's insurance, the object of tariffs, taxation and similar matters. Arithmetic and reading are carried beyond the *Volksschule* limit, and essays are set in such subjects as those mentioned. But the chief energy of the *Fortbildungs-schule* is expended on drawing, which is taught in the most methodical manner and on a carefully devised system. The principle is, while training the hand and eye, to make the exercise bear specifically upon the trade in which the pupil is engaged; and great ingenuity is expended on adapting the lessons accordingly. The lads have to come clean, and particularly with clean hands, which has a good disciplinary effect.

The German continuation schools are for the most part administered and maintained by the municipality under Government supervision and with the aid of a grant. They also receive in many cases substantial support from employers, who have also founded and maintained such schools, where they did not otherwise exist, on their own initiative. Other employers, again, where there are none, insist that their apprentices shall attend neighbouring schools. A special class of continuation schools called "work-schools" is maintained in the State mining district of the Saar, and the miners of the Ruhr coalfields have a number of their own.

With regard to girls, they are taught sewing and other hand-work up to fourteen in the *Volksschulen*. Afterwards, those who stop at home and help their mothers have an opportunity of learning and practising all kinds of housework; but in an industrial country, such as Germany has become, a great many begin to earn their living at once in factories and shops. They are apt to forget what little they have learnt and to acquire no further domestic accomplishments until they marry and enter the school of experience unprepared. This defect is to some slight extent, but in no uniform manner, remedied by domestic schools, of which there were, in the year 1897, 163 with 9,689 scholars. Only twelve of them were established by municipal or other local

authorities; the great majority are carried on by religious bodies or by employers of labour. A few are of ancient foundation, but, as a whole, these schools are the creation of the last few years, and may be regarded as a beginning. The subjects of study are cooking, sewing, knitting, ironing and other household occupations. In these respects, the education of girls belonging to the middle and upper classes is far better provided for than that of the lower classes, although the latter have more need of it.

There remains one truly educational factor in the life of the workman, though it is not usually regarded in that light. At twenty all male German subjects, with some trifling exceptions, are liable to service with the colours for two years in the infantry or three years in the cavalry. It is reduced to one year in the case of elementary school teachers and candidates for the post, and to one year's voluntary service for those who have reached a certain standard of higher education, or who pass the required examination. Practically the able-bodied male population passes through the ranks at the age 20-22. The liability comes just when a lad has learned his trade and undoubtedly forms a break in his civil career; but I have met with no two opinions about its educational value to the individual and its industrial value to the nation. Perhaps the most striking effect is the physical benefit derived from the exercises, drill, gymnastics and regular life. It turns a weedy anæmic lad into a well-knit upstanding young man with sound organs and well-developed limbs. It further teaches him cleanliness, discipline, order, authority, self-respect and respect for others. The effect in the workshop is visible at every turn. It is not too much to say that military service has been in a great measure the making of industrial Germany. Employers and employed have gone through it together; they have learned in the same school, and they equally understand that order is essential to every organised force, industrial as well as military. Recent revelations have shown that military service has a dark side, like most other things, and its abuses are a deep disgrace to Germany; but they do not invalidate its good effects.

Regarded as a whole, the German national system of education does its work very well. The aim is not so lofty

as the American one, but it is much more effectually carried out. The worst side of it is the failure to stimulate individuality and the reduction of all minds to a common mould. There is too much subordination. Germans lack initiative, they lean too much on authority, and are too helpless without it. Both the educational and the military systems have that effect. It is possible to have too much of any virtue, and order may become a weakness if not a vice.

England.

The past of English public education presents a somewhat sorry spectacle compared with American or German; it has had neither the inspiring idea of the one, nor the methodical completeness of the other, and it cannot be doubted that the country has suffered in comparison. I have already referred to the peculiar position, and to the great change which has recently taken place; but this very change makes it difficult to deal with the subject on the same footing as the other two. It seems waste of time to explain a system or want of system which has ceased to exist; and on the other hand, the new system is too young to have any bearing on existing conditions which are the result of the old. I will therefore confine myself to the main points.

In 1870 schooling was neither free nor compulsory.[1] There were then 8,281 "voluntary" schools, carried on by religious bodies with State aid (dating from 1833), and having accommodation for rather less than 2,000,000 scholars. At that time Germany had long had a full national system, and there were 7,500,000 scholars in the common schools of the United States. But the contrast is not all to the discredit of England, for if it shows the indifference of the British public it also discloses a faithfulness to duty and a liberality of endowment on the part of the churches (which were the Church of England, the Roman Catholic Church and the Wesleyan Methodist Church) not to be found elsewhere. It should not be for-

[1] The juxtaposition of these words, which have an almost technical meaning, is awkward and may confuse foreign readers; "free" means gratuitous.

gotten that they bore a burden which the community assumed elsewhere; and they continued to bear a large part of it. In 1870 public schools were created, to be provided and maintained by the local community with State subsidies, and administered by popularly elected boards. Thenceforward the two classes of schools—voluntary and board—were carried on together. The great difference in their position was that the latter could command the rates. With regard to teaching, the voluntary schools of course made a cardinal point of dogmatic religious teaching according to their own tenets, while for the board schools, after a fierce controversy, an unsectarian form of bible teaching was settled by law. There was, however, no definite educational aim in view, and if there were it soon dropped out of sight in the rivalry between the two sets of schools and in the efforts necessary to earn the Government subsidy. The conditions under which the grant was made turned it into the chief object of school administration. And in addition to this unfortunate feature the school boards had to create their teaching staffs, which consisted consequently of untrained persons. Twenty years after its establishment I asked some leading members of the London School Board: "Are your teachers educated?" and they unanimously answered "No". Moreover, in some localities, of which London was a conspicuous example, education became the plaything of party politics, which is the most fatal thing that can happen to any institution.

Nevertheless, in spite of all these drawbacks, much zealous and faithful work was done in the next thirty years, during which both classes of schools increased steadily, but the board schools gradually overtook the voluntary ones. In 1876 school attendance was made compulsory, a provision which was and still is deeply resented by a large section of working-class parents. No age was laid down, but parents had to see that their children received "efficient elementary instruction in reading, writing and arithmetic," and persons were forbidden to employ any child under ten years old or over ten unless it had obtained a school certificate. In 1891 elementary schooling was made practically free. The following international distinction is, therefore, to be noted. In England elemen-

tary education is uniformly free and compulsory; in Germany it is uniformly compulsory but not free; in the United States it is uniformly free, but not compulsory. In 1899 the central educational authority, which had been a department of the Privy Council since 1865, was raised to an independent position and made a Government Board of Education. And in the same year the age of compulsory school attendance which had been fixed at eleven in 1893, was raised to twelve.

Concurrently with these legal changes a great development had taken place. Between 1870 and 1900 the number of voluntary schools increased from 8,281 to 14,409 and 5,691 board schools were established. The accommodation increased from 1,878,584 to 6,509,611, and the number of children on the register from 1,693,059 to 5,686,114, ranging from three to fifteen years of age; and the number of teachers from 28,341 to 145,944. The curriculum was gradually enlarged and extended, evening continuation schools, special schools for blind, deaf and defective children and a few higher grade schools were established; but the last were subsequently pronounced illegal, and taken over by the local municipal authorities. The English evening continuation schools are highly appreciated in Germany. I found that Dr. Kuypers, the Düsseldorf district inspector, before establishing the evening schools which I have described above, had visited England to study the voluntary evening schools, and he was full of admiration for them, especially for those of the London School Board. He gave effect to his opinions by imitating several features in organising the Düsseldorf schools. Honour to whom honour is due. The English infant schools are also remarkable. Further, between 8,000 and 9,000 school libraries have been established and nearly 7,000 savings banks.

This is not a bad record in the circumstances; it represents a great growth of interest, much steadfast labour and faithful personal service. In many localities the dual system worked quite harmoniously and the schools maintained a good standard of efficiency. The voluntary schools naturally had the greater struggle because they had not the rates to draw upon, but they trained their teachers better

and were certainly not the less efficient of the two in results. The officers of the London County Council, which is anything but friendly to them, paid a high tribute, on taking them over in 1905, to the standard maintained in many of those in London, and particularly to the moral hold of the teachers over the children. In other towns they were still more successful, and gave such general satisfaction that few board schools were found necessary. I have given the relative figures for the towns described in Chapter II. and called attention to the great preponderance of the voluntary schools in the industrial towns of Lancashire. The fact indicates a living interest in education on the part of at least a considerable section of the population. It is one thing to support schools through the local or State taxes, which cannot be evaded and are demanded *en bloc*, and quite another to put your hand in your pocket and give a voluntary subscription for a specific purpose.

But in spite of some good features elementary education has certainly been a failure in England. The country has steadily declined in vitality since 1876, when the compulsory law may be said to have inaugurated a national system. That is not due to education, but education has not prevented it. There has been something essentially wrong about it. The children have been taught to read and write, but their taste is deplorable and their speech incredibly bad. Country dialects have been modified, but their broad, strong and expressive inflections have given place to a hideous bastard lingo made up of mincing affectation and slovenly enunciation. It is most conspicuous in London but spreads over an ever-increasing area, and forms part of the conventional stock-in-trade of every slum novelist. This speech is new and it is taught. My own belief is that it has arisen from the efforts of public school teachers to speak in an elegant manner. The most prominent sound is the pronunciation of "a" like "i". Two years ago a newspaper boy in a station not far from London came past the railway carriage calling "Piper!" as usual. I stopped him and said, "Why do you say piper? How do you spell it?" He spelt it. "Very well, p a is pā; p i is pi." From that day till now not only that boy but all the other boys in that station

have ceased to call "Piper!" I conclude that it is either taught or not corrected in school. With this pronunciation has also come the extended use of foul and filthy language to which I alluded in Chapter I. It is accompanied by an uncouth demeanour and unruly behaviour. Parents universally complain of the increasingly turbulent, insubordinate and unmanageable conduct of the children, and it is patent to every one. The only visible result of the general accomplishment of reading is the output of an immeasurable amount of printed rubbish. Three or four firms alone turn out daily and weekly publications in millions of copies and hundreds of tons—all rubbish. The best thing to be said for it is that the rubbish is not offensive; it is chopped straw and syrup, not putrefying offal. It is accompanied and sustained by an ever-increasing flood of quack advertisements—drugs, foods and beautifiers—appealing to the ignorance that has learnt to read. Then children are taught to sing; and, as I have already said, the only audible result is that throughout the length and breadth of the land, from the metropolis to the remotest village, they bawl the silly jingle or mawkish sing-song of the music halls.

These are not the only results of popular schooling, but they are the most prominent. And can any one maintain with even a show of plausibility that the physical, intellectual and moral standard of the people has improved in the last twenty-five years? What sign is there of higher motives or increased capacity in any direction?

The chief defects seem to have been (1) lack of a defined purpose or guiding principle, (2) misdirected efforts caused by the conditions attaching to the State grant, (3) inadequate training of teachers. The last is of the utmost importance, for teaching is a personal matter, and the teachers are more than methods, systems or syllabuses. According to the last published statistics (1902-03),[1] there were 162,126 teachers, of whom 124,186, or more than three-fourths were female, a much greater disparity than in the United States, but due in a large measure to the infant schools. Of the whole number only 70,886 or considerably less than half were certificated, and of these

[1] *Statistics of Public Elementary Schools*, 1902-03, Cd. 2,000, p. 12.

nearly 31,000 were untrained. The trained teachers numbered 39,904, or about one-fourth, and the period of training was:—three years, 520; two years, 39,384. There were 24,438 pupil teachers, 7,833 "candidates admitted as teachers," and 2,878 "probationers". If this list be compared with the German professional corps it looks positively farcical. And the wastage is enormous. I put some recent figures[1] in a tabular form:—

	1903.	
	Output.	Wastage.
Trained masters	1,010	509
Trained mistresses	1,698	947
Certificated masters	417	164
Certificated mistresses . . .	2,779	1,126
	5,904	2,746

The salaries of 68,306 certificated teachers are given. They range from under £50 (1,074) to over £500 (two between £500 and £600, one £700). The mean for masters was £131 13s., and for mistresses £87 11s. 3d. Of the masters, 28·2 per cent. received over £150, and of the mistresses 27 per cent. received over £100. I am not able to compare these salaries with German or American ones, because they only include the better-paid teachers, forming considerably less than one half the whole staff; but so far as it is possible to form an idea they seem to be comparatively liberal, and decidedly so in the higher ranks of the service. There were 1,146 masters and 159 mistresses receiving over £250 a year. In Prussia, only 270 masters and no mistresses were in this scale in 1901, and none of them enjoyed anything like the highest salaries paid in England.

There seems to be something wrong about the English scale; it looks as if the lower ranks were starved to provide lavish pay at the top. However that may be, elementary teaching is certainly not a profession. Perhaps a reason more potent than the pay-roll is the lack of social standing attaching to the career. This is very galling to an ambitious and clever man, who is acutely conscious of a position below his abilities. University men, to whom the

[1] Sir F. D. Powell, *Royal Statistical Society*, 15th Nov., 1904.

elementary school offers better pecuniary prospects than a curacy or an undermastership in a private school, have fought shy of it for this reason. The dissatisfaction has been greatly enhanced by the hopeless character of many school boards. It is intolerable to a fairly educated man, who has (as many have) a good conceit of himself, to be either patronised or snubbed by vulgar placemen who can barely read or write and cannot pronounce a single word in the language properly, merely because they have for reasons of their own made themselves agreeable to a certain number of equally ignorant electors. The gross and shameless unfitness of many members of the boards has cast a blight over the whole field. The galling position of the teachers has fostered the Bradley Headstone spirit in men already inclined to be morbidly self-conscious; and it is a very baneful spirit in the school, because it not only finds vent in self-assertion but imparts the same diseased and sour view of life to the children.

But much of this is now of the past. By the Act of 1902, extended to London in 1903, the school boards were abolished, and the local administration of public elementary education was placed in the hands of the county councils and county borough councils. By this step a simple and uniform framework of central and local control has been established, not only for elementary but also for higher, including technical, public education; and the basis has been laid of a real system, more homogeneous than that existing anywhere else. It abolishes the division of authority and permits the co-ordination of the several grades of education with singular completeness. At the same time the conditions under which the State grant is given have been amended, the provision for training teachers has been improved, and the aim of elementary education has been admirably defined. The guiding principles are laid down so well that I quote them in full from the code of regulations issued by the Board of Education in 1904.

> The purpose of the Public Elementary School is to form and strengthen the character and to develop the intelligence of the children entrusted to it, and to make the best use of the school years available, in assisting both girls and boys, according to their different needs, to fit themselves, practically as well as intellectually, for the work of life.
>
> With this purpose in view it will be the aim of the School to train the

children carefully in habits of observation and clear reasoning, so that they may gain an intelligent acquaintance with some of the facts and laws of nature; to arouse in them a living interest in the ideals and achievements of mankind, and to bring them to some familiarity with the literature and history of their own country; to give them some power over language as an instrument of thought and expression, and, while making them conscious of the limitations of their knowledge, to develop in them such a taste for good reading and thoughtful study as will enable them to increase that knowledge in after years by their own efforts.

The School must at the same time encourage to the utmost the children's natural activities of hand and eye by suitable forms of practical work and manual instruction; and afford them every opportunity for the healthy development of their bodies, not only by training them in appropriate physical exercises and encouraging them in organised games, but also by instructing them in the working of some of the simpler laws of health.

It will be an important though subsidiary object of the School to discover individual children who show promise of exceptional capacity, and to develop their special gifts (so far as this can be done without sacrificing the interests of the majority of the children), so that they may be qualified to pass at the proper age into Secondary Schools, and be able to derive the maximum of benefit from the education there offered them.

And, though their opportunities are but brief, the teachers can yet do much to lay the foundations of conduct. They can endeavour, by example and influence, aided by the sense of discipline which should pervade the School, to implant in the children habits of industry, self-control and courageous perseverance in the face of difficulties; they can teach them to reverence what is noble, to be ready for self-sacrifice and to strive their utmost after purity and truth; they can foster a strong respect for duty and that consideration and respect for others which must be the foundation of unselfishness and the true basis of all good manners; while the corporate life of the School, especially in the playground, should develop that instinct for fair-play and for loyalty to one another which is the germ of a wider sense of honour in later life.

In all these endeavours the School should enlist, as far as possible, the interest and co-operation of the parents and the home in an united effort to enable the children not merely to reach their full development as individuals, but also to become upright and useful members of the community in which they live, and worthy sons and daughters of the country to which they belong.

Here are combined the best elements of both the German and the American principles, and the way is pointed to a much nearer realisation of the true ideal than either. The functions of the elementary school are stated with the utmost clearness in the order of their importance, the methods of fulfilling them are indicated, and the way in which "equality of opportunity" can best be realised –namely, in the selection of those best fitted to profit by higher education—is pointed out.

It is nothing short of a thorough reformation of method, which may be turned into a reformation of practice in a few years. Unfortunately, a legacy is left from the old

order, which has already caused great trouble and threatens more. It is the double set of schools which has let in the "religious difficulty". Although the board schools gained steadily on the voluntary ones in the number of scholars, they still did not educate half the children in 1902. The average number of the scholars in that year was:—voluntary schools, 3,092,159; board schools, 2,875,709. The former were thus distributed: Church of England, 2,333,587; Roman Catholic, 337,596; Wesleyan, 157,403; "British" and others, 263,573. These schools were owned by the several bodies, which exercised full control over them, subject to the jurisdiction of the State department. The buildings have now been handed over to the use of the new authority, but the cost of maintenance, and any repairs or improvements which may be required, is still imposed on the former owners. In return they are allowed certain privileges in the management. They may appoint four out of six managers, whereas for the other schools all the managers are appointed by the local authority. In this way the religious bodies are able to secure denominational religious teaching by teachers selected by themselves. In this connection it should be noted that nearly all the training establishments were founded and conducted by them; out of forty-seven residential colleges only two were undenominational.

In localities where concern for education is greater than sectarian animosity this disposition has caused no trouble, and the new educational system has begun to work well. But in some places all the worst passions concealed beneath religious zeal have been let loose and have joined hands with party politics to arouse an acute controversy. No looker-on can see any difficulty in arranging that children shall have whatever religious teaching the parents desire, and many feasible plans have been suggested, but as yet to no purpose. The battle of the sects goes on. Before the English people let it end in the abandonment of religious teaching, which is threatened, they will do well to study carefully the object lessons presented by Germany and the United States. There are two ways of disposing of the religious difficulty; one is to dispose of religion, the other to live and let live.

CHAPTER XVII.

TECHNICAL EDUCATION.

THE word "technical" is very elastic. From a perusal of prospectuses issued by various technical institutions, I gather that it covers all industries, trades and crafts, from cooking to ship-building, and from sick-nursing to pig-keeping, nearly all the arts, most of the sciences, several other branches of learning, such as history, political economy, literature and languages—in short, everything that can be learnt except elementary reading and writing at one end of the educational scale, and the old university and professional studies at the other end. No definition will cover the whole of this field, which extends far beyond that which is "useful," or directly preparatory to earning a livelihood. Nor is it possible to classify all the institutions which come under the head of "technical". Their development in a comparatively short time—for the most part within twenty years, and almost entirely within forty—is a very remarkable fact; it testifies to a belief in schooling which verges on the superstitious, and there are already signs that the thing has become a fetish to many.

It follows from the multiplicity and diversity of studies included that the subject of "technical education" is in a state of confusion. That applies to every country in some degree, but not equally. In England and America the confusion is chaotic, in Germany much less so, though this branch of education has not the same clearness of aim and organisation as elementary and secondary education. It cannot have quite the same clearness, because the purpose of specialised education is necessarily far more diversified than that of general education, but the well defined organisation of the latter in Germany has provided a better basis

for the super-position of specialised studies than the comparatively unsystematised scheme in America or the total absence of system in England. I will, therefore, take Germany first.

Germany.

The previous chapter dealt with the elementary school system (including higher elementary and continuation schools) of Germany, and I will here add a short account of the higher schools, which is indispensable to a clear comprehension of the subject. There are for boys three types, differentiated by the courses of study, and two grades of each, distinguished by the length of the course, which is six years (nine to fifteen) in the lower grade, and nine years (nine to eighteen) in the higher. Thus there are six classes of higher school in all, namely (1) *Gymnasium*, full classical (Latin, Greek, French *or* English, history, etc.); (2) *Realgymnasium*, half classical, half "modern" (Latin, French, English, mathematics, etc.); (3) *Oberrealschule*, "modern" (science, modern languages, no classics); all these for nine years: then the three corresponding lower grades for six years, (4) *Progymnasium;* (5) *Realprogymnasium;* (6) *Realschule.*[1] The higher girls' schools are quite distinct; girls are taken up to fifteen or sixteen and learn two modern languages. It is at once apparent that the higher schools are thus differentiated with a definite view to preparation for different careers in life; and that is, in fact, the case. The choice is made early in life, and the schooling adjusted to it; the successful completion of a particular course is the avenue to a particular position. For instance, the full *gymnasium* course alone entitles to the full university curriculum, and thence to the higher professional and official careers; the *Realgymnasium* and *Oberrealschule* are the avenues to a limited choice of university studies with corresponding professions to follow; the lower grade or incomplete courses have a still more limited outlook.

[1] The respective numbers in Prussia in 1901 were: *Gymnasien*, 285; *Realgymnasien*, 70; *Oberrealschulen*, 32; *Progymnasien*, 50; *Realprogymnasien*, 40; *Realschulen*, 113. Of course, all these types do not exist everywhere; the provision varies according to local requirements.

It is difficult for an Englishman or an American, accustomed to the go-as-you-please method or want of method at home, to realise how cut-and-dried, how precisely ordered and how *official* the whole thing is in Germany, and how great the importance attached to these distinctions. Broadly speaking, in England and America a man is judged by what he is rather than by his academic record or his official or social position. He is, for example, a gentleman or not, capable or not; and if the verdict on a man in a high position is Not, then so much the worse for his position which is brought into contempt. That independence of judgment is still more thorough in this country than in the United States, where wealth and titles at least are notoriously paid a public homage which has but a pallid reflex here.[1] In Germany official standing imposes and academic standing commands respect of themselves, apart from the individual. There is both strength and weakness in this. It is better than worshipping wealth, and I have shown what a valuable influence it exercises on the teaching profession; but it also stifles and oppresses. Whatever its effect, it cannot be transplanted, and while we admire the ordered method of German education, we must remember the entirely different habit of thought and social conduct with which it is inextricably entwined.

Technical education is moulded by the same influences. When a thing becomes important in Germany it is academised, so to speak, and given official standing. Industry and commerce have followed science in acquiring academic rank alongside the older learned studies. Hence the technical high schools and the still later commercial high school. With the latter I am not concerned. The *Technische Hochschule* is a university of industrial science, having the same standing as the older universities but without the corporate

[1] It is a great mistake to attribute servility even to the peasantry in England. They are cool and critical judges of conduct; they hold that *noblesse oblige* and heartily despise those who possess wealth or station and fail to live up to their responsibilities. The House of Commons has been brought into general contempt of late years by the conduct of members, sunk in party strife, devoid of dignity, capacity or serious purpose; membership commands no respect, but rather the contrary. The Royal Family, on the other hand, have won immense esteem and popularity by performing the duties of their stations in the most conscientious and admirable manner.

university life. It stands at the head of the technical education scheme and grants degrees—Doctor of Engineering; but it does not bear the same relation to the lower technical school that the university does to the *Gymnasia* and the other institutions just described. That is to say, pupils do not go up to the *Technische Hochschule* from the lower technical schools. They go up to it from the secondary schools—the *Gymnasia*, the *Realgymnasia* and the *Oberrealschulen*—as to the university. It is strictly an alternative university, and it demands the same high standard of previous general education as a condition of entrance.

The organisation of technical education, therefore, is not parallel with that of secondary education; but it follows similar lines of cleavage. As there are several well-defined types of secondary school, leading to different spheres in life, so there are several types, though less well defined, of technical schools leading to different planes in the industrial world. Yet it is difficult to classify them in a way that is at once correct and clear. Roughly, however, they may be divided into three groups—(1) lower, (2) middle, (3) higher. If the reader will turn to the account of Chemnitz given at p. 195, he will there find examples of different forms of lower and middle technical schools and will gain some idea of their differentiation.

(1) The lower group includes artisan (*Handwerker*) and specialised trade schools (*Fachschulen*) for apprentices, co-ordinate with the evening continuation schools and alternative to them; attendance at a trade school excuses from the other. These trade schools are for the most part conducted by the guilds, which have recently been revived with well-defined powers and charged with the maintenance of the apprenticeship system. There are also in some places apprenticeship workshops in addition. All these things have an important influence on the general industrial efficiency of the nation; but they chiefly concern the small handicrafts and have very little bearing on the large manufacturing industries, with the possible exception of weaving. They are particularly numerous in Saxony and some parts of Prussia, especially Berlin; but they are not uniformly distributed and vary much in character and organisation.

(2) The middle group includes several types, three of which are illustrated in the account given of Chemnitz. The Royal Academy and Technical Institutes and the Weaving School described in that town belong to the middle group. I have said above that the Akademie is in the nature of a technical high school and virtually it is so, but it has not that official status and must be counted in the middle group. It really stands between the technical high school and the superior trade school. The following account of the origin and purpose of the schools kindly given me by Professor Fehse, helps to make the subject clear :—

"Thirty years ago or more there sprang into existence a kind of schools calculated to give a theoretical instruction to young men going in for a trade or an industry. These schools were called *Gewerbe-schulen.* The diversity of trades caused a splitting into branches; hence—engineering school, dyeing school, trade drawing school, soap-boiling school, milling school, building school, the last working only in the winter terms, their pupils, aiming at becoming master builders, being employed practically in summer. You are quite right in presuming that these branches are the same as the *Fachschulen* in Prussia. In Chemnitz they are crowded into one house, under one head, forming altogether the *Technische Staatslehranstalten.* Conditions of admission are the certificate of a *Volksschule* and some years or terms of apprenticeship in a trade. In the course of time a higher degree of *Fachschule* has been organised and added to the *Technische Staatslehranstalten* for young men who have attended a secondary school and obtained the certificate entitling them to one year's voluntary service. The curriculum takes up seven half-yearly terms, at the end of which time the men who pass their examination get the diploma of an engineer. This school has three different branches: machinery, architecture, chemistry."

Corresponding with these two institutions are two textile schools, a higher and a lower. The first is of the same type as those described in the other textile towns on my list. They are all high specialised, and that is the rule with trade schools in Germany. The "crowding into one house" of which Professor Fehse speaks, is exceptional. These middle technical schools, as I have called them, are

generally single institutions representing not only particular lines of industry, but also particular branches in those lines, in the textiles, for instance, cotton (M. Gladbach), wool (Aachen), silk (Crefeld), drapery (Barmen). Similarly with different branches of engineering, small metal trades, pottery, building. And such specialised schools are placed in centres, where those industries are carried on, as in the cases just mentioned. Other examples are Iserlohn (bronze), Remscheid (small iron), furnishing textiles (Plauen), engineering (Hagen), engineering, smelting and rolling (Duisburg).

These are essentially the schools that provide technical instruction for the large manufacturing industries, and they are of great importance. They are not all of the same grade, but may be roughly divided into higher and lower, corresponding to the two sets of schools at Chemnitz explained by Professor Fehse. The lower ones are sometimes called "foremen's" schools, but besides foremen heads of establishments, draughtsmen and other experts acquire their scientific training here. The higher ones give more advanced and specialised teaching to persons of superior education; but there is no clear line of demarcation.

Another type of the middle technical group, which ought to be mentioned, is the art trade (*Kunstgewerbe*) school. There is one of these at Düsseldorf and it is mentioned in my account of that town.

(3) The third group is formed by the technical high schools, already mentioned. Of these Germany has ten, situated at Berlin (Charlottenburg), Munich, Dresden, Stuttgart, Brunswick, Carlsruhe, Darmstadt, Aachen, Hanover and Danzig. They have no uniform curriculum, but all of them teach architecture, civil and mechanical engineering, chemistry, mathematics and physical science. Special subjects are naval architecture (Berlin and Danzig), mining (Aachen), forestry (Stuttgart), agriculture (Munich), and so on. There are also two high schools of mining, at Freiberg in Saxony and Klausthal, and a mining school at Berlin in connection with the *Technische Hochschule*.

I do not think it necessary to give details about the organisation of German technical schools, as they have been so very fully treated in a series of consular reports by Dr. Rose,

lately British consul at Stuttgart;[1] but I have some general remarks to make. The three groups into which I have divided them are broadly intended for three classes of persons engaged in industrial occupations: (1) workmen, (2) manufacturers and their ordinary staff, (3) high scientific experts; but there is no precise line of demarcation between (1) and (2) or between (2) and (3). Provision is made for workmen in the middle group by means of evening and Sunday classes, and a man of superior education intending to be an expert might choose a middle school instead of a high school. In some industries he would do so as a matter of course. The classification is therefore somewhat rough.

We may put the matter in another way and make a division by reference to day and evening classes thus:

(1) Lower group . . .	All Evening Classes (or Sundays).
(2) Middle group . . .	Day and Evening Classes.
(3) Higher group . . .	All Day Classes.

From the point of view with which I am concerned, groups (2) and (3), which cater for the great industries, are the important ones; and what they supply is highly educated heads, managers, superintendents and experts. I have often seen technical education in Germany referred to by English writers and speakers on account of its value in producing skilled workmen. That is a double delusion. Skilled workmen are not produced by technical schools anywhere, except perhaps in the artistic handicrafts; industrial skill is acquired in the workshop and the mill. Nor are German workmen more skilled than British; in some great industries, and particularly cotton spinning, they are conspicuously and admittedly less so. But more than that. So far as the large manufacturing industries are concerned —and they are the ones in point when we are speaking of international competition—the German technical schools have generally but little to do with workmen. I have said that the middle group have some evening classes for workmen, but the number of pupils attending them is comparatively small. In the large technical institute at Chemnitz out of 1,031 pupils in 1900, only 50 were attending the evening classes; at the engineering school at Duisburg,

[1] See also the Seventeenth Annual Report of the Commissioner of Labour, U.S.A.

which is of the lower grade, only thirty-four workmen graduated in fifteen years; at the textile schools enumerated by Dr. Rose the highest number of evening pupils in 1901 was 172 at Barmen. Such figures as these sink into insignificance compared with those of the English technical schools, at which the evening pupils studying the great industries are numbered in hundreds and sometimes in thousands.

I repeat, therefore, that the services rendered to the competing industries by technical schools in Germany lie in the training of the officers, not of the rank and file. And the branches of such industries chiefly affected are: chemistry, electricity and ship-building by the technical high schools:[1] textiles, mechanical engineering and machinery by the middle schools. Of these chemistry has the widest importance, because it enters into everything and its range is constantly extending. The manufacture of chemicals alone has become one of Germany's greatest assets, valued at fifty millions sterling a year; but the secondary applications of that science are still more important, including metallurgy, dyeing, the properties and uses of fibres, oils, and, in short, all raw materials. These studies are carried to the furthest limits of theoretical knowledge in the technical high schools with a direct view to industrial application. Electrical engineering comes next in importance; the foremost position occupied by Germany in this modern and illimitable field is due to technical training not less than to the genius of Siemens. The middle schools exercise their most important influence in textiles and in mechanical engineering. They are more practical and less purely scientific than the high schools. With regard to mechanical engineering the opinion I have found prevailing among manufacturers and engineers is that the high school course is too long and theoretical and rather unfits men for ordinary mechanical engineering. Employers bringing up their sons to the business prefer to send them to the middle schools; it is these that chiefly supply the workshops, not "Charlottenburg," as some people erroneously suppose in England, where that blessed word has become a regular Abracadabra. It was stated

[1] It should not be forgotten that chemistry and electricity are also taught at the universities, but with a less directly industrial purpose in view.

by the Association of German Engineers in 1901 that out of 3,281 employed by 105 of the most prominent works in Germany two-thirds came from the middle schools. In the textile industries designing and dyeing are the spheres which owe most to the schools. A noteworthy feature of technical training in Germany, which cannot be too strongly emphasised, is that it is not regarded as a substitute for the workshop or the mill. On the contrary, the rule both in high and middle schools is to insist on previous practical experience, which may vary from one to four years.

England.

I pass on to England, and in doing so I wish to say with all possible emphasis that in no subject connected with this inquiry have I met with so much misapprehension or so much unjust depreciation of native institutions. No doubt that is largely owing to the fact that technical education in its modern form is a comparatively new thing in England, being but little more than twenty years old, and the impression of backwardness has remained when it is no longer deserved. The rapid development that has taken place within the last ten or fifteen years is all the more remarkable, and a sign of energy full of meaning to those who can read signs. I should hesitate to say that the provision in England to-day is superior to that of Germany on the whole, but in some respects it certainly is. The two are, however, so different that comparison halts. There is a fundamental difference which can be put in this way. In Germany, as I have endeavoured to show, the technical schools supply the large industries mainly from above; they train men who have previously had a superior general education as heads, officials and experts.[1] In Eng-

[1] The proportion of men going in for industrial science who have taken the classical school course instead of the "modern" is very striking. Out of 2,736 students at the Prussian high schools in 1899, the distribution was: from *Gymnasia*, 1,406; from *Realgymnasia*, 1,065; from upper *Real* (modern) schools, 265; and of the candidates at a recent examination for the position of State engineer the proportion was: from *Gymnasia*, 70 per cent.; from *Realgymnasia*, 27 per cent.; and from *Real* schools only 3 per cent. At the Berlin High School, which occupies a more distinguished position than any other, only 4 per cent. of the students in mechanical engineering came from modern schools. Those who think that the way to compete with Germany is to abolish Greek and Latin are invited to consider these figures.

land they supply mainly from below; they educate boys belonging to the working-classes—boys at work in the mill or at the forge—into foremen, overlookers, managers and experts. In Germany the real work of the technical schools is done in day classes, in England in evening ones. Of course, the distinction is not absolute; there are evening classes in Germany and day classes in England, but the disparity is so great as to prove my point. The following comparative table, drawn up from particulars collected in 1900 by a committee for the corporation of Bolton, will illustrate the differences:—

Technical or Higher Trade Schools.

German.			English.		
Town.	Day Students.	Evening Students.	Town.	Day Students.	Evening Students.
Berlin ... ... (weaving school)	20	250	Bolton ...	40	2,500
Nüremberg ... (building school)	478	353	Birmingham	200	1,500
Chemnitz ... ... (weaving school)	60	none	Leicester ...	18	1,000
Crefeld ... ... (textile school)	200	none	Derby ...	100	1,000
Mühlhausen ... (chemistry)	75	none	Salford ...	60	1,500
Reutlingen ... (spinning and weaving)	150	none	St. Helens	none	1,000

These figures need explanation. The German schools are specialised; the English ones include many miscellaneous studies which swell the numbers. In fact, they perform the functions of the German artisan (*Handwerker*) and guild schools, but they also teach the local manufacturing industries, and they teach them in evening classes. The Berlin school, which is quite exceptional, is the only one of the English type on the list. I think the Bolton committee must have been mistaken in saying that four of the schools had no evening students; my own information, which is borne out by Dr. Rose's reports, is that most of

them have a few. It remains true, however, that they cater mainly for a superior class of students, and that Germany has not the provision for the technical training upwards of factory workers that we have in England.

This follows from another point of difference. If actual workers are to go to school, not only must the classes be in the evening, but there must be a school in the place where they work and live ; that is to say, technical schools must be generally, if not universally, diffused. In England they are, in Germany they are not. For instance, Düsseldorf is a large and important manufacturing town, in which several industries are carried on. Over 10,000 men are engaged in the metal trades, which include engineering works of the first rank, some 3,000 hands in textiles, and glass, paper and chemicals are also manufactured on a large scale. Yet it has no technical school at all, except for art trades. Students of engineering must go to Duisburg or Hagen ; of textiles to Barmen, Crefeld or Gladbach. Again, one of the most important textile towns in Saxony is Zwickau, but it has no school. Students must go to Reichenbach, Glauchau or Chemnitz, which is impossible for working hands. Many similar instances might be named. In England I have been unable to find any such ; every manufacturing town, even down to those with 20,000 inhabitants, has its own school, though it may be under the shadow of a big neighbour. Writers have urged this as a fault and have criticised the profusion in Lancashire, for example. Not content with a great technological college in Manchester, itself under the shadow of a modern university ; not content with large technical schools in the other great towns—in Bolton, Oldham, Blackburn, Preston, Burnley, Bury, Rochdale, etc., etc.—every little place must have its own in addition. There are nearly 40 schools in Lancashire that teach cotton-spinning and weaving, as well as other things. Most of the large towns teach mechanical engineering also. Similarly in South Staffordshire, instead of being content with Wolverhampton, all the smaller places round about have schools of their own for teaching metal work and the manufacture of iron and steel. So too in Yorkshire, and in the Northamptonshire boot and shoe district. In London the profusion is bewildering ; there are about a score of

polytechnics or technical institutes, and a great number of other institutions.

All this is not over-lapping or over-profusion, but absolutely necessary if working hands are to enjoy the advantages of technical instruction. The schools are not, of course, all of equal value and some are very humble affairs, but the best are equal to any and the least are superior to the little hand-loom weaving places which count among the textile schools of Germany and vastly superior to the "correspondence schools" of America. If any other country had the same provision it would be extolled by English writers and platform orators in season and out of season.

The comparative merits of these English technical schools and the German ones to which they correspond (namely the middle schools described above) in regard to manufacturing industries may be a matter of opinion. The German ones are more centralised and specialised, the English more diffused and comprehensive. But I suppose that an ideal system would combine the merits of both, and that can be more readily accomplished from the English starting point. It is certainly easier to add special higher grade institutions to a mass of widely distributed popular ones than to create the latter; or rather—for this is really the way to put it—it is easier to provide for a comparatively small number of higher grade day students than to give the rank and file such opportunities as they have and use in England. When the superior students come forward they can be accommodated without difficulty. But apart from that I see great strength in the English system. I have a very firm belief in the capacity of our working-classes in the north. Their initiative, industry and energy built up the great industrial edifice, and I see those qualities reflected to-day in the schools reared so quickly by local enterprise and in the eager intelligent faces of the factory lads who throng the evening classes. A scene at Blackburn in particular is printed on my memory, though I have seen the like elsewhere. I was taken into a class-room where a class on pattern-making for weaving was going on. About seventy lads were present. They were so well dressed and superior in their appearance that I asked, Who are these boys? "They are working-lads and the sons of working-men,"

was the answer. Noting my surprise the teacher called out: "All of you who go to work in the mill to-morrow at six, hold up your hands"; and all but ten held them up. As I say, sights like this can be seen in every large manufacturing town in England, but very rarely in Germany or America.[1]

These young fellows are the pick of the working-classes, the most intelligent, enterprising and ambitious. They do not intend to be workmen; they are qualifying for superior positions. I have found the technical schools universally regarded by trade unionists and intelligent workmen as "stepping stones out of the mill".

With regard to the teaching and equipment they are in some respects inferior and in some superior to those in German schools. The latter, I think, carry the intellectual training further, which might be expected from the character of the majority of their students. It was noticed by the party representing the brasswork industry of Birmingham which recently visited Berlin that the effect of the technical training there was to get more "conception" into the work;[2] and I think that holds good in general of all classes of work to which it is applicable. In textiles great attention is paid to the artistic side of dyeing and designing. But very good work in this direction is done in the English schools too. I have seen a letter from the principal of Roubaix, which is one of the most famous European schools, praising some exercises done by the students at the Bradford College and asking how they were taught, as he could not get the same results; and a Bradford-taught boy was not long ago appointed teacher at Roubaix. But the distinguishing merit of English schools lies in the practical grasp of the subjects they impart. I have gained the impression that the teachers have a more real and actual, as distinguished from an academic, knowledge of manufactures. The schools do not teach the actual processes; I believe the trade unions object to that, and it is forbidden. They

[1] The public expenditure on technical schools in England in 1901-02 was £1,008,917 of which £862,002 came from the State grant under the Customs and Excise Act and £146,945 from local rates; 3 county councils, 30 county boroughs, 99 boroughs and 189 urban districts made grants from local rates for technical instruction.

[2] *The Brassworkers of Berlin and Birmingham.*

teach the principles and impart a theoretical mastery which cannot be acquired in the workshop or mill; but the teachers have the practical knowledge which can only be acquired there and are not dominated by the theoretical.

The equipment is probably better on the whole in the German schools, though to that there are exceptions. Most of them have been longer established and have had more time to complete their installations; and the greater concentration and specialisation permit of more expenditure on particular institutions. None of our textile schools, for instance, have so complete an installation of cotton machinery as München-Gladbach or so good a museum and library as Crefeld.

So much for the English schools corresponding to the German middle and lower ones. The German high schools are represented in England by the universities and some special colleges of science. Here again a remarkable development has taken place in recent years both in the establishment of science departments in the old universities, particularly Cambridge, and still more in the growth of the new universities of London, Birmingham, Liverpool, Manchester, Leeds, Sheffield and South Wales. They do not, for the most part, contemplate the application of science to industry so directly as the German high schools, but there is no reason why they should not when called upon to do so. I understand from the highest authorities that in equipment and teaching our higher science schools are not inferior; sometimes they are superior. The departments of physical and mechanical science at Cambridge are not surpassed for the highest work by any in the world, and the metallurgical school at Sheffield, which has a very direct industrial bearing, is unique.[1] With the universities, the National Physical Laboratory and the coming Imperial College at Kensington it is not schools that we lack now, but scholars.

[1] The *Kölnische Zeitung* expresses the opinion of German delegates at the meeting of the Iron and Steel Institute at Sheffield, in September, 1905, thus: "The extensive new equipments give one the impression that the well-known complaint of English people, that in the way of education, they are much behind does not apply any longer to Sheffield, particularly not as regards the metallurgic and engineering sections. On the contrary, there is much—indeed, very much—for Germany to learn there". Had they visited the metallurgical and mining sections at Birmingham they might have said the same.

When comparisons are made between the number of students of engineering, for instance, at science schools here and in Germany or elsewhere it is putting the boot on the wrong leg to call for more schools; the real difference lies in the lack of scholars. And the reason is that manufacturers in Germany and elsewhese have long ago realised the value of highly trained men in industry and have created a demand for them. It acts in two ways. Firstly, industry is recognised as a career for men of superior standing and education; the business of manufacturers' expert is well paid and it attracts numbers who would otherwise go into professional or academic life. Secondly, those who do go in for it, instead of gaining all their knowledge at the works, go to a school to acquire a thorough scientific mastery. The thing is demanded and consequently it is supplied. In England the demand is only beginning because the need has not been felt. This accounts for the comparatively small number of industrial science students both at the high schools (universities) and at the day classes of the technical schools. The difference in the attitude of manufacturers is shown very clearly in some of the textile trades. In a comparatively small German mill making dress goods I found eighteen designers at work all men of good education; in a large English one I found three or four, and those not of the same calibre. Some German makers of dress goods employ from sixty to eighty designers for several weeks in preparation for a new season. To be in the forefront it is necessary to have men who have not only learnt designing but possess intelligence and ideas. Fashions are often evolved by consultation between manufacturers' experts and buyers for the trade; the former invent patterns, colours or combinations, which are submitted to buyers, or the latter have ideas which must be translated into practical shape. I have seen this process going on in a German mill, where one of the designers happened to be engaged with a customer: the two were working out ideas together, making sketches, criticising and altering.

It is only in this way that a hold on the market can be retained. Germans have particular need of well-trained brains for the work, because they are not naturally inventive or gifted with the innate sense of elegance possessed by

the French, if they will pardon my saying so. Consequently the manufacturers give liberal support to the schools and further encourage them by providing employment to graduates. There is no doubt that it pays them. A manufacturer in Elberfeld was showing me one day a length of dress material. "That," he said, "is going to England, and it is made of English stuff. I get the materials from England, manufacture them, and send them back. I pay carriage both ways, and yet I can sell this in the English market." "How do you manage to do it?" I asked. "Well," he said, "you see this is a nice design; there is brains in it." It was a good answer, and, I am inclined to believe, the whole answer; for he pays higher wages and more for coal than manufacturers of similar goods in Yorkshire, and there are no kartells in his business. Our manufacturers often complain that German and other foreign competitors steal their designs; and doubtless it is true. They do the same and steal French designs themselves. Every nation helps itself to the ideas of others; but it is not possible to go on competing successfully with borrowed brains and second-hand ideas. The nation which is richest in ideas will come out first; and the Germans realise that more thoroughly, I think, than we do. Hence their efforts in this direction. Our own schools do excellent work, but they do not command the same superior material. Even when the students have had a higher general education they are in some respects inferior. Sir William Ramsay writes to me in answer to a question about the equipment of our technical schools, and the instruction given there:—

> Our teachers are, on the whole, as good as the German teachers, and our appliances often as good, and in general sufficient. It is in the previous training of the youths who enter our colleges and technical schools that we are defective. Not that German boys are cleverer, or that they have any special knowledge of science subjects, when they enter; but they are much more systematically trained. All their school subjects dovetail together. The whole system is well worked out.

Here, of course, we once more strike the fundamental national difference, and of course, too, the advantage is not all on the German side. It opens up the subject of secondary education, into which I cannot enter; but I beg the reader to notice Sir William Ramsay's observation that the German boys aiming at the industrial science career

have no special knowledge of science on entering the technical school or college.

Summing up this comparison we may say that while England has long been backward in technical education, it has of late years righted itself with so much energy that the provision from below is already greatly superior to that of Germany and the provision from above has at least equal potentiality, if the same use is made of it. And that has begun. The demand is increasing and the influence beginning to tell, though it has not yet had time to produce effects comparable in magnitude with those of Germany, which has had a long start. The movement will unquestionably be assisted by the co-ordination of educational institutions under the Education Act of 1902, which places the general and technical schools under the same local administration. I have no doubt that in a few years technical education will be developed in England to a degree of completeness which cannot be matched in any other country. The great weakness at present has nothing to do with education, or at least with schooling. It is the fact that a very large proportion of boys never learn or attempt to pursue any trade at all. They follow the line of least resistance, and as soon as they are released from school—and often before—they begin to earn money by unskilled labour as errand boys, shop boys, van boys, newspaper boys and other casual occupations. There is always a demand for their services, and the temptation is irresistible. Thus they grow up without any special knowledge or skill at all. As they grow older and cannot live on boys' wages they are thrust out by the constantly renewed supply of younger lads, and drift into the ranks of casual or inefficient labour. This touches the manufacturing industries but little, because in manufacturing as distinguished from trading towns boys go into the works and factories and do acquire skill, though less thoroughly than in former times when apprenticeship was more general. The case is, therefore, somewhat of a digression from the strict point of view of this book. But it has such an important bearing on the general welfare of the community, and is really responsible for so much that is often attributed to want of technical education, that the mention of it is not irrelevant

here. In a sense it is due to want of technical education; in the sense of training, that is to say, but not to the want of schools.

The United States.

After what has been said, the distinguishing features of technical education in the United States can be made clear by comparison in a short space. Broadly, it resembles the German more than the English system in that it supplies industries from above rather than below; but it possesses the merits of neither. It has not the specialisation and thoroughness of the one nor the general diffusion of the other. It is so unevenly distributed and so heterogeneous that classification is hardly possible. There are schools corresponding to all the three German types distinguished above, a few corresponding to the English type and some of a novel type. The most important are the high schools, otherwise institutes of technology and technical departments of universities and colleges. They are very numerous and are attended by a large aggregate number of students. The studies preparatory to industrial occupations are classified under the head of several sorts of engineering—namely, civil, chemical, electrical, irrigation, mechanical, metallurgical, mining, marine, sanitary and textile. Out of this list those which have to do with manufactures are, I presume, chemical, electrical, mechanical, metallurgical and textile engineering, though I am not at all sure what is meant by chemical and textile engineering. In 1901 mechanical engineering was taught in 85 institutions to 5,623 students electrical engineering to 2,696 students in 79 institutions, chemical engineering to 536 students in 15 institutions, and textile engineering to 234 students in 4 institutions; making a total of 9,089 students. If civil and mining engineering be added the total is 14,130. These are very large numbers, and they testify to a great demand for college-trained men. That is, in fact, the most salient feature of technical education in the States.

It is a demand of comparatively recent growth and it has developed of late years with great rapidity. In writing of Boston I said that the Massachusetts Institute of Technology, opened in 1865, was the oldest establishment of the

kind; but that is not strictly accurate. The Rensselaer Polytechnic at Troy, New York, was opened in 1824; but that was an isolated effort, and it only teaches civil engineering. The real development of academic training in industrial, science dates from a much later period. It began at the top with high-class institutions; it did not develop upwards out of ones of lower grade, as in Germany. The lower trade and technical schools have all been added later, and most of them within quite a short time. They have sprung up independently here and there without any plan or relation to each other and chiefly through private enterprise. This accounts for their heterogeneous character and uneven distribution. But the higher grade institutions are still the most numerous. Every State has at least one, at which some technical course is offered, if it is only in "domestic science". New York State and Pennsylvania have ten each. Massachusetts and Illinois have five, and so on. Many are State universities and colleges, many others are private institutions bearing various titles—university, college, school, institute, polytechnic; some are for coloured students.

I call them higher grade or high schools, because I do not know how else to classify them, but of course they are not all of equal standing or value. They vary greatly in every respect and only the very best can be classed with the German technical high schools or the English universities. The greater number have no higher status than many of the English technical schools.

Then we come to a series of schools corresponding more or less with the middle German group. Among these the textile schools stand out as the most specialised and the most nearly resembling the German type on which they are modelled. The oldest is that at Philadelphia, of which I have given some account; it was opened in 1884 as an addition to the Philadelphia Museum and School of Industrial Art, and it is chiefly devoted to the art side of designing, weaving and dyeing. The number of students in 1901 was 297, of whom 179 attended the evening classes. There are seven other textile schools, all very much more recent; three are in Massachusetts and four in the Southern States. The most important is the one at Lowell of which I have

given an account in describing that town. This provision for the textile industries is extremely meagre compared with Germany or England. Nor are the individual schools, though well equipped in a sense, equal to the German and English ones, with the exception, perhaps, of the art work at Philadelphia. The mechanical equipment has been very largely furnished by American machinery makers, which may be good for them but is not good for the teaching. The school should have the most varied selection possible of the best machinery used in the trade; but American mills are full of machinery which is not provided in the schools, while the latter are full of inferior machines presented by the makers, for textile machinery is not a strong point of American manufacture. These schools owe their existence to the initiative of manufacturers but they have received liberal state and municipal support. They are so recent that they are only beginning to exercise an influence. A gentleman in Lowell told me that six months previously he had been asked to find a competent man to take charge of a cotton mill at a salary of $3,500 (£700), and up till then had been unable to find one.

The only other branch of manufacturing industry which appears to command specialised school instruction is watch-making. The other schools, which may be placed in the middle group, are of a more mixed character, and are chiefly confined to a few large cities, notably New York and Philadelphia. They are not co-ordinate with the textile schools and bear no resemblance at all to the German engineering (middle) schools. They are more like the lower trade schools at Chemnitz or some of the English technical schools. The best known are the Pratt Institute at New York (Brooklyn) and the Drexel Institute at Philadelphia. The Pratt has day and evening courses and gives instruction in art, dressmaking, general and industrial science, mechanical and building trades. The total number of pupils studying fine art, domestic art, science and technology in 1901 was 1,502, of whom 864 attended day classes, and 638 evening classes. The Drexel is of a higher grade; it does not teach trades, but art and science bearing on industries. The number of pupils attending technical classes in 1901 was, day, 429, evening, 762; total, 1,182.

New York is also noticeable for a number of lower trade schools. The fact seems to strike visitors, who take the provision there as typical of America, which is very far from being the case. These schools teach building trades and handicrafts, and have no bearing on manufacturing industries. They resemble the lower trade schools of Germany, except that a few of them aim at teaching the trades wholly in school and without concurrent or previous real work. The total number of schools in which some sort of manual and industrial training is given is 118, exclusive of those for Indian children. The total number of pupils was 41,059, of whom 14,820 were female. This list does not appear to include a kind of continuation schools kept by the Young Men's Christian Association, in which industrial drawing and sometimes the use of tools is taught together with commercial and general subjects. They are very numerous and have a roll of 26,000 pupils.

Nearly all these lower and middle schools, as well as a large proportion of the colleges and institutes, are the outcome of private enterprise and liberality, which accounts for their extremely heterogeneous character and uneven distribution. It is perhaps an arguable question whether this mode of origin or the action of public authorities, as in Germany and England, indicates a more general interest in technical education, but the uneven distribution accompanying the American plan is a very serious defect. When one comes to make comparisons the most conspicuous thing in America, far more conspicuous than the provision in certain places, is the total absence of it in others. The superiority of England in this respect, which I have pointed out in the case of Germany, is far greater as regards the United States. The most glaring instance of deficiency is Pittsburg. Not only that great seat of industry and its semi-detached neighbour, Allegheny, but the entire district with its series of huge manufacturing concerns, has been up to now without any provision whatever. And there are scores of important industrial towns in the same position, not only in the Southern States or out West, but in New England, New York, New Jersey, Pennsylvania, Ohio and Illinois. A proof that this want is severely felt is that peculiarly American institution, the correspondence school.

These schools aim at giving technical instruction by correspondence, and they number their pupils by the hundred thousand. They evidently supply a felt want, but they are only a make-shift substitute for class-rooms, laboratories and workshops.

There seems to be a general opinion that technical education has not had much to do with the industrial expansion of the United States in the past. It has certainly played a very much smaller part than in Germany. Most of the large concerns were built by men of energy who had little or no schooling, and rose from the ranks. The present provision has come since the great railway and industrial development, and in consequence of it. The rapid expansion caused a demand for trained men, who could not be supplied fast enough. This, I think, accounts for what I have called the supply from above. There was an opening for men of good education, and the colleges hastened to fill it. The pace has continually increased, and the large corporations sometimes "order" men by the dozen. When I was at the Technological Institute at Boston I was told that the United States Steel Corporation had just ordered a batch of fifty; they go to the works on trial for a year. The large numbers turned out in recent years must be having a considerable effect. Yet I see that in 1900 one-fourth of the total number of "manufacturers and officials" engaged in manufacturing and mechanical occupations were foreigners. I think this highly significant fact must have escaped the attention of those who think that Europe has much to learn from America in the matter. The myth of "the American workman" and his superior skill has been dealt with more than once. Technical education, high and low, appears to suffer from the national defect of want of thoroughness, which arises from the craving for short cuts. Hence the correspondence schools and the attempt to teach industries in school without practical experience. Opinion may be divided on the question whether technical schooling ought to be preceded, accompanied or followed by practical training. I can only form a second-hand judgment derived from men of experience, but their verdict is decisive. I have asked the question of a great many leading manufacturers

and managers in all three countries, and they were unanimous in condemning school training without practical experience. In the German technical schools previous practical knowledge is usually insisted on for a full course of study. In America the theoretical study precedes practical work, and the complaint of manufacturers is that it often unfits men for the workshop. Some high authorities have found the American training shallow and superficial. This coincides with the experience of the Rhodes scholars at Oxford in other studies. American university graduates have been found less well grounded than English schoolboys of the same class.

From a broad survey of the whole educational field three salient results emerge, like peaks rising from the plain, and mark the three countries—in America commercial push, in Germany the careful performance of a set task, in England a traditional standard of character and conduct. The last is the contribution of the "public" schools, which are still the most valuable, as they are the most distinctive, educational asset we possess.[1] The relative value of the three will depend on the point of view, and, of course, from the industrial standpoint the last is of hardly any value at all; but in other fields it is supremely valuable. And when you have a good thing, keep it; supplement it, add to it by all means, but keep it. The counsel which I see daily expounded by writers on education, that in order to get something that you have not you must begin by destroying something that you have, is a counsel of blindness and folly.

[1] Their peculiar value lies in their traditions incorporated in a discipline which is enforced chiefly by the boys on each other in their corporate life. Men of ability but of humble birth, resentfully conscious of not having had the educational advantages enjoyed by the sons of wealthier men, are not aware that the distinctive merit of that education lies in the severe and prolonged discipline which it imposes, not in book-learning but in personal conduct and habits.

CHAPTER XVIII.

CONCLUSION.

We have now examined the chief conditions affecting industrial life in the three countries and are in a position to gather up the threads. They are so numerous that even if any reader has been sufficiently interested to wade through the whole book I can hardly expect him to form a compact and definite conclusion off-hand out of such varied elements; but to me, having lived so long with them, they have focussed themselves into a very clear and speaking picture or set of pictures.

We have here the three leading industrial nations, distinguished by natural circumstances and human qualities. By virtue of both England or rather Great Britain developed a great industrial activity earlier than the others and obtained a long start. I say by virtue of both, because it was not merely through natural resources and the advantage of situation and insular security that Great Britain took so great a lead in the last century, but also through the skill, energy and unparalleled inventiveness of her people. The indefinite maintenance of the lead then obtained was neither to be expected nor desired. The other nations could not fail to develop their resources as opportunity offered and the means became available, and when the time came their activity would naturally be greater and their expansion more rapid, because delayed. All that is obvious. But they have done a great deal more than make up for lost time and reduce the start which circumstances gave to this country; they have within the last twenty years or less not only caught us up in many things in which we were once unrivalled, but have surpassed us in some. They compete successfully not only in neutral markets but in the home

market and that with products once peculiarly British. It is not necessary to furnish statistical proof or to calculate the precise degree of their success. The broad fact is patent and suffices. The admission of one of the greatest captains of industry in England, quoted in a previous chapter, is enough for my purpose—"We have been outstripped in some respects". How has this happened?

Now if one country alone be taken, it is easy to find some consolatory cause. For instance, we may point to the superior natural resources of the United States or to freedom from legislative restrictions; but Germany has no such superior resources or freedom from restrictions. If, on the other hand, we pick out low wages in Germany and attribute her success to that, the argument rebounds when applied to America. By taking both we are saved from such fallacies, and if my comparison has any merit, it is that. No reader of this book, whatever else he may gather, can fail to perceive that in most things Germany and the United States are at opposite poles. But they have two things in common against England. The first of these is composed of several elements, but they may all be compressed into one word—work; the second is the tariff. I will dispose of the latter first.

I have hitherto said nothing about the controversial subject of Free Trade *v.* Protection, and what I have to say now will not detain us long. It is a business matter, not directly concerned with production or efficiency at all, but with buying and selling. Its indirect influence, however, is so great that it must be taken into account among the forces governing the situation.

Now, all business consists in buying and selling. Ultimately, no doubt, it is exchange of commodities, but since exchange only takes place through the medium of money, as the standard of value, it is actually buying and selling. Successful business consists in buying cheap and selling dear; the lower the buying and the higher the selling price the greater the success. The object of free trade is to buy cheap, that of protection, or duties on imported commodities, is to sell dearer. Success does not depend on one or the other, but on the relation between the two, and that depends on a great many circumstances. It is, therefore, obviously

impossible to lay down any absolute rule, and say that buying at the lowest price *or* selling at the highest is necessarily advantageous. If buying at the cheapest rate entails selling at an unremunerative one, whereas a better price can be obtained by buying a little dearer, the latter may be more advantageous. Similarly, if selling at a high price entails buying too dear, it may be better to sell at a lower price. Free trade looks solely to the buying price, and leaves the selling to take care of itself; protection looks to the selling price, and, if unscientific, it looks to nothing else, but if scientific it keeps an eye on the buying price and endeavours to adjust the relation of the two to the best advantage.

When a country imposes a protective tariff against foreign goods, it does so in order to secure a remunerative selling price for the protected commodities at home. This prevents the population from buying those things as cheap as they might have done. It does not necessarily make the things dearer than they were before, or dearer than in some unprotected country, because prices are also affected by other conditions; but it necessarily makes them dearer than they would be if unprotected. That is its object. It is, in effect, a tax paid by the community to ensure a remunerative price to the producers of the protected things. What the community buys therewith is the maintenance of the persons engaged in the protected industries, and the consequent increase of national productivity and strength. If it does buy this and could not otherwise secure the same result, it may make a good bargain; if it does not, it makes a bad one. It follows that if the industries necessary to maintain the population can be successfully carried on without protection, it is to the advantage of the community to do without it. No sane person buys dearer than he need for the mere fun of it.

The protection afforded by a tariff undoubtedly stimulates the protected industries; it acts like a hothouse on a plant. By securing a remunerative home market it enables the producers to sell a portion of their products abroad at a lower rate than they otherwise could and so increase their output to its highest economical capacity. This is called "dumping" by those who suffer from it. I do not know

the origin or proper meaning of the word, but it is intended to convey dislike and contempt, like "black-leg" and similar slang terms. Both Germany and America dump surplus products in Great Britain and gain thereby an economic advantage for the industries affected. Further, the command of the home market secured by the tariff, enables the producers to form combinations among themselves to maintain prices or otherwise manipulate the market, which they could not do if it were open to all competitors. These combinations are called by various names—trusts, combines, corporations, syndicates, kartells and so on. They have been very much discussed of late years, but according to my observation those who know most about them do not discuss them; they form them. Their effect on the general welfare of the community does not concern me; its consideration would involve the whole question of the ultimate economic bearing of protection and free trade, which is a thing that nobody understands, as the volumes written about it abundantly prove. They contradict one another and are contradicted by events. What I am concerned with is the actual international competition of industries; and with regard to that it is undeniable that protection with its corollaries does give the protected competitors a great immediate economic advantage over unprotected ones. Whether this pays or does not pay a protecting country as a whole, or in the end, is a question which I leave to the controversialists.

So much for the first of the two things which Germany and America have in common against this unprotected country. Some people think that it is the whole story; others take the opposite view and contend that Germany and America have succeeded in competition as they have, not because of protection, but in spite of it. Probably, however, more take a middle view, and while recognising that the protective tariffs have handicapped British competition, think that there have been other factors in play. That is my own conclusion, and it is with those other factors that this book deals. I am convinced from what I have seen in the three countries—and I submit with all humility that no one has attempted a comparative study either so close or so comprehensive—that tariffs alone, though they

be raised as high as Haman's gallows, could not do for Germany and America what they have done by other means.

I sum them up under the word "work," because it covers them all, and no other does. The methods are so entirely different that they only have this common quality; and here lies the value of the double comparison. It enables us to see that the essential thing is not this or that, as we have so often been told, but just work, which finds expression in different forms according to national circumstances and character. The British people have been deluged of late years with exhortations to find salvation in copying some particular procedure or institution which happens to have impressed an observer in some other country. The advice may be good, but probably it is not, for the particular thing recommended has been adapted to conditions which certainly differ in some degree, and may differ very widely indeed. The real thing to copy is the spirit which has issued in that procedure or institution, and without which it is useless.

The industrial success which has "outstripped" England has been reached, I repeat, by widely different roads in Germany and America; in the latter by the almost unaided efforts of the persons engaged in industry, in the former by the co-operation and inter-play of a large number of factors, of which industrial effort is only one, though the most important. This will, perhaps, require a little further explanation.

The American method of work in the industrial sphere is distinguished by the following features: enterprise, audacity, push, restlessness, eagerness for novelty, inventiveness, emulation and cupidity. Employers and employed have exhibited the same in their degree. The manufacturer aims at extending his business, he takes up novelties, encourages invention, studies the market, tries devices to increase output and diminish cost. Hence, for instance, the standardisation of products, the organisation of the workshops, the demand for highly educated officers, and the alert control exercised by large combinations, which enable a central authority to check the management of each component by the results of the rest, and to screw up any that are grow-

ing slack.[1] The employed are eager to earn as much as possible and to better themselves. Both are absorbed in their occupation, and bend all their energies to it. I do not mean to say that all these qualities are invariably present; I have shown that in some trades and centres they have been conspicuously absent. But they are the distinctive qualities and methods that have won success; and, broadly speaking, they have been exercised without either help, save the tariff, or hindrance from outside.

The industrial expansion of Germany presents another picture. It has been achieved by equally hard work, but the adventurous audacity and restless search for novelty of America have been replaced by steady and watchful effort. The circumstances of the country, not less than the national character, have imposed this difference. But there is another, not less striking, to which every subject handled in this book bears witness. The industrial population has not been left to carve out its own destiny, but has been guided and helped at every step. All sections of the community, from the throne to the workhouse, have contributed something. *Laisser faire* or *Manchesterthum*, as they say in Germany, is dead; ordered regulation is accepted and applied with infinite pains by the legislature, Government departments, municipalities and private citizens. It is seen not only in the scientific tariff but in the careful and judicious factory code, the state system of insurance, the organisation of traffic and transport by railway and canal, the fostering of the mercantile marine, the educational provision, municipal action and poor-law administration. So the edifice has been built up four-square and buttressed about on every side. It is a wonderful achievement in which every unit has played a part, and the spirit which has brought it about is the spirit of duty and work. Here is the explanation of the two remarkable facts that a comparatively poor country, labouring under considerable natural disabilities, has raised itself to the very front rank

[1] At the little conference of British manufacturers who had been through the States, which is mentioned in the chapter on Wages, great stress was laid on the American method of combination, concentration and strict management. One gentleman present had recently compared results in thirteen oil mills and found great leakage; so he turned out the managers and concentrated the management in one office.

of industrial productivity, and that its poorer classes, though far less favoured by circumstances, yet maintain a higher level of well-being and a far higher level of vitality than those of its wealthier rivals. And to those may be added a third—the power of making an exceptionally quick recovery from depression caused by the fluctuations of trade. Germany compels admiration.

England is like a composite photograph, in which two likenesses are blurred into one. It shows traces of American enterprise and of German order, but the enterprise is faded and the order muddled. They combine to a curious travesty in which activity and perseverance assume the expression of ease and indolence. The once enterprising manufacturer has grown slack, he has let the business take care of itself,[1] while he is shooting grouse or yachting in the Mediterranean. That is *his* business. The once unequalled workman has adopted the motto "Get as much and do as little as possible"; *his* business is football or betting.[2] Each blames the other. [I shall have to qualify these remarks presently; I am now drawing a broad comparative picture.] Then the manufacturer complains of being handicapped in various ways; and he is justified. He *is* handicapped by laws and by-laws and obsolete regulations, which have the effect of hindering him in some respect without any set-off in the way of help. And what do all these mean but carelessness and neglect on some one's part? Legislators who pass laws without taking the trouble to ascertain the facts or understand what they are doing, or who fail to alter obsolete and detrimental ones, such as the patent laws and the tax on industrial alcohol; Government departments too indolent to watch events and adapt regulations to changing conditions; local authorities applying by-laws without discretion, piling up rates without thought and administering the poor law without care; everybody

[1] Sir John Brunner has given me an amusing illustration of the way in which some concerns are conducted. He has, he says, frequently known two foremen in a woollen mill, each with *carte blanche* to buy a particular chemical, the one on the lower floor used to counteract an excess on the upper floor, and the same traveller selling both chemicals.

[2] In a certain electrical works the men winding coils got slower and slower until at last the average time taken to wind a single coil was about ninety minutes. Girls were put on, and a girl will now wind more before breakfast than a man did all day.

bent on pleasure and amusement. That is the universal business. No one is in a position to abuse the rest; they are all in the picture and wear the same expression from top to bottom of the social scale. Not every individual, of course, but every class. We are a nation at play. Work is a nuisance, an evil necessity to be shirked and hurried over as quickly and easily as possible in order that we may get away to the real business of life—the golf course, the bridge table, the cricket and football field or some other of the thousand amusements which occupy our minds, and for which no trouble is too great.

It is not necessary to labour the case. Since I began this investigation the broad facts of the situation have become widely recognised, and what was thought three years ago to be an amusing paradox is now reflected as sober truth in every newspaper. This autumn many leading journals have published long and severe reflections from many correspondents on the national failings, which save me the trouble of arguing the point at length. I will take the liberty of quoting a few samples, and as others see us better than we see ourselves I will give precedence to the candid foreigner.

"A German Resident" writes in *The National Review* (June, 1905):—

> The young man or woman leaves the primary school in England with no idea of duty, and no knowledge that the position of your country was won by the sacrifices of past generations in war, or that war is still one of the means by which the progress of the race is maintained.
>
> Your workers are determined to level down, not to level up; they would drag down the industrious and energetic to the standard of the idler and the shirker. It is within my own knowledge that wages have recently risen in England to a degree beyond the advance in productivity so that your labour is paid more and produces less.
>
> So far as my own experience and observation go, the majority of your workers read little but the sporting press, and care for little but betting and sport. It is always a source of wonder to me, after seeing, as I have seen, the thousands who go to Lord's or to the Oval on some week-day, not a holiday—and you now live in almost perpetual holiday—that any work at all is done in England. If your men idle two or three days in the week, and do less than they ought to do on the other four, they cannot wonder that they do not hold their own, or that there are many unemployed.
>
> Though your workers are now earning high wages, I observe that they do not use their money well. Instead of spending it upon their homes, and paying higher rents, or buying better food, or saving for bad times, it goes too often to the bookmaker or the public-house; and yet

you will hear these men complain that they are not provided with better houses by the municipality or by the State. They are allowed to travel on railways at a price which does not pay the companies, by a special law made in favour of their class, yet they seem to think that they ought to pay nothing for their journeys. Perpetually they expect everything to be given to them, and themselves to give nothing.

You are even getting ready, I see, to feed the children of the poor, and next I suppose you will clothe them as well, winding up by maintaining their parents. In fact, you seem bent upon producing a nation of degenerate paupers, not of sturdy men. I always thought that the English were a nation with strong common-sense, but of late I have begun to doubt that belief. Your politicians appear ready to promise anything to the working-man, provided it is at somebody else's expense; he already pays little taxation, but I understand he is to pay less in future. Whatever he asks for is to be given to him, as to a spoilt child, whether it is good for him or not. You call this democratic government; I call it the rule of the nursery. The children are to govern the wise and far-seeing men—to ruin your State in gratifying their own selfish caprices.

Take the administration of your towns. It is impossible to find out who is responsible for what is done or left undone. The maximum of money is expended for the minimum of effect by a host of jarring authorities, who are driven on to foolish measures by the mob.

An American, Mr. John T. Taylor of New York, writes in *The Daily Telegraph* :—

And right here I will state my conviction as a soldier, a surgeon, a sociologist and a student of history, that however bad your War Office and Army are (and I admit they are both very bad), yet the vast majority of the people of Great Britain are very much worse than either—and they are still rapidly declining in all the vigorous virtues of true manliness.

The plain truth is the English are suffering the physical diseases which arise from excess and immorality. Your females show their physical degeneration by their excessive increase in stature, which has always been a characteristic of those ancient races which have been killed off the face of the earth by their luxuries and vices; for as human females increase in size so also they decrease in vigour, endurance and fruitfulness. Thus, in spite of all the scientific and sanitary improvements you have made, not only has your birth-rate declined faster than that of every other nation in Europe during the last thirty years, but you have enormous increases of premature births, of congenitally defective infants, cripples, etc., of feeble-minded children, and a continously diminishing proportion of male to female infants. These diseases produce that weakness of mind, that childishness, from whence arises the love of games and horror of work which distinguishes the modern Britons from their grand and noble ancestors, whose daring and independent spirit was superior to that of any other nation in the world. Nowhere on earth is the pauper-spirit so extravagantly developed as in England, where begging has been elevated to a virtue, so that now few Britons, from the highest to the lowest, are ashamed to beg either for themselves or others. To waste and want are now the leading characteristics of the majority of Anglo-Saxons. So wasteful are British men—and women also—that if your workmen's wages had been doubled ten years ago, and the cost of rent, food and clothing reduced by one-half, the extra cash, instead of being saved to provide them with

an independence against sickness or old age, would have been squandered in drink, tawdry finery, gambling, childish amusements, and immorality; and the physical and mental condition of your people would have been far worse even than it is to-day. Family duties, the honour and glory of parentage, would have been shirked just as much, or even more than they are to-day. Unwilling to feed their own offspring, the trade unionists are demanding that their children shall be fed at the expense of the State, and that, at the same time, they themselves shall be relieved of all taxation, and shall be housed by the State. Can such mean-souled creatures who shirk their duties to their families ever be induced to do any military duty to defend their country? I calculate they cannot.

A "Russian of position," signing himself E. O., writes in *The Pall Mall Gazette*:—

But, I repeat, it is too late for you to take any action that will save your race from speedy extinction, because during the last thirty years the English people have become mentally, morally, and physically rotten to the core. If your male population only were defective there might be some chance of your regeneration; but your women have decayed also, as is clearly proved by the miserably feeble, imbecile, crippled and neurotic children which they bring into the world to be future English citizens. It is not town life, poverty, nor hardships, but your decadent vices which have brought mental and physical decay upon all classes of the English people, rich and poor alike, and made you such unpatriotic, cowardly curs as you are to-day. I knew England well during my mission here between 1870 and 1879, and by recent examination I find there have been stupendous improvements in all the conditions of life of the working-classes, and of the very lowest classes also; yet the physical and mental debility of the English and their criminal depravity are quite three times worse than they were thirty years ago.

The worst material conditions surrounding your poorest classes in England would be considered splendidly luxurious and healthy by the best-paid working classes of Russia and of most European and American cities; and yet your politicians, pseudo-philanthropists and parsons of three hundred sects, pander to the masses by telling them that their diseases and distress are not caused by their gross immorality, idleness and extravagance, but by conditions which can be cured by charity or Acts of Parliament.

Thus the candid friend. But the criticisms of foreign observers have been fully equalled by those of Englishmen who have seen something of other countries, which give them a standard of comparison.

An "Old Mechanic of the Old School" writes in *The Standard*:—

Although I never got on to be a foreman, I had one bit of good luck a few years ago. I was sent with some other men to put up new machinery at gasworks in Germany. There I learned how the German workmen manage to be happy, strong and healthy, and to behave like gentlemen on much less wages than English workmen get. German workmen are not

sportsmen, but they are gentlemen in conduct and manners, good husbands and good fathers. Those who have been physically fit for and have done their military service are mighty proud of it, and so are their womenfolk.

I cannot help thinking myself but that the worry and excitement of betting on sporting events is ruining the health and stamina of the majority of our working-men. I am not much of a Puritan; I had a bet on Sayers in 1860, and I have made a few bets since; and I am not a total abstainer from alcohol and tobacco. But I certainly am convinced that if English working-men go on in the same way that they have done during the last fifteen years the English nation, as well as the British Empire, will go to the dogs very speedily, although we may have no European wars to hasten on our destruction, for the rot is taking place in the very heart of the people. Betting men and drinking women are stocking the country with weakly children. The working-men seem to have lost their former high-spirited independence, and trade unions now select as leaders those men only who are the apostles of pauperism and who demand State aid for every unionist.

And now I will close this letter, which has taken me a long time to write, by stating my conviction that a judicious system of universal military service for home defence would solve the unemployed difficulty, and confer more real benefit on all the working-classes than a rise of 30 per cent. in wages and the expenditure of a hundred million pounds on rehousing of the poorer people. As I am over sixty-five years old, and not an educated man, you must pardon me being long-winded and bringing in other points beside sport.

A correspondent, whose position is guaranteed by large print, the place of honour and a leading article, writes to *The Times*, under the signature of "Vidi," on the subject of the Anglo-French *entente*. After speaking of the "moral regeneration" of France and the earnest tone of public opinion there, he goes on to say:—

This, Sir, is, as briefly as the nature and importance of the subject permit, the result of inquiry on the French side of the Channel. May I venture to append some account of the impressions received in England? There, satisfaction at the happy understanding seemed to me not less deep and real than in France, though the state of the public mind in England was much less encouraging, and the reasons assigned for the satisfaction were less coherent. I found, indeed, the present "moral tone" of Great Britain far inferior to that of France. To use a theological expression, France appears to have "grown in grace," while England seems to have "backslidden" since 1901, when I last had an opportunity of judging English feeling at first hand. Then the chastening influence of South African disaster, ignominy and reparative effort was still apparent, and seemed to justify high hopes for the future. To-day it is discouraging to see the lessons of that ordeal still unlearnt, the warnings in great part unheeded, and all classes of the nation bent on gratifying an un-English passion for luxury and excitement. Large ideas seem to be tabooed, and empty "cleverness" exalted; responsibilities to be ignored; a hand-to-mouth happy-go-luckiness to be the prevailing mood, and (sorry homage to Carlyle!) the dominant spirit to be visible even in the streets, where

women of all classes dress at 10 A.M. as though life were a perpetual garden party. The exaggerations of sport, against which Mr. Kipling pungently protested, are as manifest as ever, and the ravages of various forms of alcoholism unabated. But the most distressing feature in England to-day is the lack of moral purpose and conviction—purpose and conviction, I mean, such as to inspire steady individual sacrifice for the attainment of a common end. I should scarcely have dared to trust my own impressions, had they not been confirmed in a dozen quarters by men whose hands are on the public pulse. One such said: "We are in a bad way; we shall muddle along till serious trouble comes, and then it will be too late. England is not susceptible of government by ideas, nor even by steadfast sentiment. She tolerates only spasmodic pandering to the whims of a capricious and half-educated public". Another said: "Underneath we are still sound, but we have run to seed and want two or three years of good stiff adversity to lick us into shape." And yet another complained: "Despite the Japanese example, we cannot generate any real spirit of every-day devotion to the common good. We lack 'drive' and deep conviction. We have some patriotic instincts and prejudices, but prejudice is a bad makeshift for reasoned purpose". The names of the men who spoke thus would startle many of your readers; none of them are party politicians.

These extracts, which are merely samples from masses of recent correspondence, refer to more than industrial efficiency; but the moral is the same. In every branch of human activity work *is* efficiency, and we play more than any other people of the same standing. It may be urged that this is better than too much work, that relaxation is desirable, and so forth. There is something to be said for that view. An American gentleman said to me one day: "We are a tearing, driving, scheming lot here. The Englishman leads a tranquil, happy life, and I for one envy him." I certainly am very far from urging imitation of the American model, for, in spite of all its activity, the American nation—green in the rind, too ripe at the core—shows more ominous symptoms than the idle, sport-ridden, pleasure-seeking British people. But that is not the point. I am not going to argue what is better or not, because I do not know what "better" means; but this I do know, that the man who works will beat the man who does not, and the nations which have "outstripped" us in industry—which *is* the point—have done so by working harder.

And yet I regard the future in this matter with entire equanimity, not because I am an optimist—which means, I take it, a person who thinks that everything will "come right" with or without reason—but because I see definite grounds for confidence. The strong comments I have quoted

above are true enough so far as they go, but most of them are one-sided, superficial and already a little out of date. The last extract is more measured than the rest, and it gets nearer to the heart of the matter.

What is the cause of this national condition which is producing so much searching of heart in one manifestation or another—military inefficiency, industrial decline, physical deterioration, diminishing vitality, increase of unemployment? It is nothing whatever but over-prosperity, which has always produced the same results in every nation which has suffered from it. I leave it to others to expound the economic causes of the great increase of wealth in this country which set in after the Franco-German war. It has been marked by fluctuations, but has, until lately, gone on progressively; the fact and its effects are plain to every eye and provable by statistical evidence *ad infinitum*. The standard of luxury, comfort and subsistence has risen throughout the scale. The wealth is diffused; not equally, of course, but diffused. There is no country in which wealth is so generally diffused, and that is why it causes so much demoralisation. It is not the concentration of wealth that demoralises a nation, but its diffusion, for the simple arithmetical reason that diffusion exposes a larger number of individuals to the risk of demoralisation which wealth undeniably brings to most people. Perhaps if it were still more diffused it would be less dangerous, but the standard at which demoralisation begins is very low. A man who earns 30s. a week and spends 15s., 10s. or even 5s. on self-indulgence and pleasure is demoralised by wealth no less than Hoggenheimer the millionaire, who is bored in the morning, bored in the afternoon and bored in the evening. Those who readily admit and denounce the demoralisation caused by wealth among the rich and the bourgeois classes will probably deny its prevalence among the poor, but those who really know them will bear me out. I quote a particular illustration from Mr. Russell Rea, of Hampstead:—

I can give a striking example of this social process from my own experience. In a particular branch of their business the firm with which I am connected employs a number of men, highly paid, earning from 40s. to 50s. per week, with no skill that cannot be acquired in a few weeks,

but necessarily of fine physique. These men are all Irishmen—they will not admit an Englishman—mostly raw Irish lads from Donegal, who can scarcely speak English when they arrive. They come sober men enough, for they have never since the day of their birth possessed so large a sum as 1s. which they were free to spend on drink or anything else. In a few weeks' time they become, with scarcely an exception, the hardest drinkers in the neighbourhood—15s. or 20s. appears to them to be a sufficient, even a lavish, allowance for the young Irish wife each possesses. All the rest is spent on drinking, treating, and perhaps betting, and they are almost invariably destitute at the end of each week.

I have already drawn attention to Mr. Rowntree's analysis of "poverty" in York, of which two-thirds is self-inflicted by similar indulgence. In no country have the poorer classes such an easy time or so little need of effort, in none are they so wasteful and reckless. America is called "the working-man's Paradise" by those who do not know it. Mr. Moseley's trade unionists, who saw behind the shop window, did not think so, though they seriously under-estimated the relative price of food; British workmen in America do not think so. I asked a great many, and the warmest affirmative was: "I have got accustomed to it now". More typical answers were: "A competent man had better stop at home," and "A working-man lives like a gentleman in England compared with what he does in America". These and similar answers were from men in good employment earning high wages.

Life is easier here, much easier, in spite of American wages. As for Germany, there is no comparison. And under these easy conditions the Gospel of Ease has permeated the nation, and has been preached from every pulpit and every platform. This is what is called "Progress". Sir William Harcourt, in the last public speech he made, put the truth in these words: "The object of the party of progress is to make life easier and more comfortable for all classes". That is so. Politicians compete with each other in promising it, "reformers" demand it, statisticians prove it, parsons rejoice over it, and newspapers applaud it. "Easier and more comfortable;" what an ideal! Comfort is the greatest good, hard work is an evil, discipline degrading, sacrifice a monstrous thing, suffering not to be thought of, and if duty entail these things, then away with it. Let us all be easy and comfortable. So men clamoured about the "strain" of the South African war. On three occasions,

hearing this talk which was borrowed from the newspapers, I asked those present, "Is there a single man in this town who has forgone a single cigar or glass of beer, is there a single woman who has sacrificed a new hat on account of the war?" And everyone was compelled to answer "No". "Then where is the strain?"

We have been brought to this state by over-prosperity; we have taken things easy because we could afford it. The other nations deride, as my quotations show, but if they had been in the same condition they would be as bad or worse. Thoughtful Germans have said to me—"We should do just the same in your place". Indeed, they would do worse, for their pleasure runs less to things that foster healthy endurance and hardihood. They are no more exempt from the demoralisation of prosperity than any one else, and if they do not see signs of it already among themselves, they must be very blind. They have exercised the virtues and qualities, to which I have done full justice, because they have been obliged. Their educational system, which forms the foundation, is a legacy from the conquest of Napoleon. Thus only could they again build up a free and strong nation. They have learnt in the great school, the school of adversity.

And not otherwise the Americans. A man has to work there, too, or he fares ill. Four-fifths of those who inherit wealth live idle lives and dissipate the money as they do here;[1] and the luxury, follies and vulgar extravagances of the idle rich far surpass those of the same class in England. The spirit of materialism is more pervasive and dominant. The strenuous life of the men, which is so much admired, is largely forced upon them by the insatiable craving of the women for pleasure, amusement and gratification of every kind. Hence, too, the rapidly falling vitality of the native stock, which is already far lower than in Great Britain, and only masked by the constant infusion of European peasant blood. I think it was Daniel Webster who said that the American nation was formed in the school of adversity; there are abundant signs that the far more critical school

[1] The proportion was named to me by the editor of a great American newspaper.

of prosperity, in which no great nation has yet graduated with honours, is beyond its strength.

But the weakness of others, however consoling to contemplate, does not make our case better. What are the grounds of confidence in the future? Simply this, that the excessive prosperity and the Gospel of Ease with it are already coming to an end. They have had a fairly long innings (the national metaphor is in place), but not so long as to accomplish hopeless ruin. I remember when all the moral teachers—Carlyle, Kingsley, Ruskin and others—exhorted manliness and work; I was brought up on them. I remember something still more significant, the comic song of the day,[1] which had the refrain—

Work, boys, work and be contented.

And there was another which ran—

Then never sit down
With a tear or a frown,
But paddle your own canoe.

We have travelled far since then, but not long, and I am satisfied that we have not lost the energy we had. We still have more physical energy than any of our rivals; it comes from our detestable climate, the greatest asset we have and happily imperishable. The proofs are about us; one is the very devotion to games and sports, and the seriousness with which they are taken. It is a sign of energy, which must find an outlet and finds it here; we must make a business even of pleasure. Another is the efficiency of some branches of active life. No one contends that our naval service or mercantile marine is inefficient. And why are they not? Simply because they cannot be When men go to sea—and none go to sea as the British do—they have to deal with the forces of nature, and if they are incompetent or neglectful they go to the bottom. Similarly with civil engineering; the men who bridged the Forth and dammed the Nile are not inefficient. So,

[1] The future historian or sociologist who wants to understand this epoch will carefully study two things which pass without serious attention the popular comic songs and the current advertisements; these mirror the people.

too, our "out-posts of empire" and frontier garrisons; they carry their lives in their hand, and no men that this or any other nation has ever sent forth were more efficient.

Necessity is the great teacher, and we have the energy to respond to her touch when we feel it. We have begun to feel it at home. In the industrial world manufacturers felt it first; years ago the cotton trade felt it and responded. Others have felt it more recently and are responding, as I have shown in the chapter on Factory Conditions. They are rebuilding, reorganising, renewing plant, extending their operations, forming combinations, adopting improvements, employing technical skill and learning from others. At the present time the best of them are, I do not hesitate to assert, more alert than any of their rivals. The owner of a great Bradford mill said to me, "I regard the Dingley tariff as the greatest blessing to English manufacturers; it has made them wake up". The workmen are waking up too, not so quickly because they did not feel it so soon and have been less in fault, but the leaders know. Some have been about the world and know that foreign competitors can no longer be despised, and that our men must work to hold their own. I see the awakening still more among the younger lads in those evening classes at the technical schools which I have described. There is no need for wages to be lowered, which is what workmen fear when they hear of foreign competition, but wages must be earned. There is no need for hours to be lengthened, but they must be filled by honest endeavour. Even prominent labour leaders have been moved to tell their clients that they have some faults and duties and are not merely suffering martyrs ground beneath the heel of oppressors.

I see an awakening in Government departments, which are collecting and disseminating information. The Board of Trade has appointed an advisory committee of business experts. I see an awakening among the general public. The concern about education is one sign, the numerous leagues for promoting useful services another, and the attention given to industrial subjects by important newspapers a third. Still more significant is the general revolt against pauperism. It has become impossible to relieve the unfortunate because the hordes of shirkers and wastrels,

brought upon us by the Gospel of Ease, block the way; and everyone who touches the problem realises the necessity of discrimination and differential treatment. The pressure of the unemployed, due to national slackness and the failure of production to keep pace with the growth of population and of the merely trading element, has begun to exercise a salutary and stimulating influence which may be trusted to continue for a long time to come. I look with confidence to the unemployed to prove the folly of breeding loafers and to induce a sane and manly habit of thought.

Then another bracing breeze is beginning to blow on municipal mismanagement, and there may even be hope for that epitome of all the inefficiencies, Parliament itself.

For these and the like reasons I think we may rely on the steady massive pressure of economic conditions to correct the functional disorder, brought on by repletion in a still fairly healthy body, but not yet advanced to an organic disease. If, however, I am wrong, and economic pressure fails, then the disease will certainly advance until nothing but a major surgical operation, such as the landing of 100,000 Prussians, can save the patient. We have got too far for talk and homilies are vain things; but this book may chance to fall into the hands of some impressionable lad troubled about "problems" and "systems," and to him I would say: "Don't worry; you were not born to set the world right, no one is; but you can play your part. Be a man; don't grumble or whine or shirk; earn your living; work, do your duty, and be as good and kind to others as you can. If your country calls on you for sacrifice, be glad and proud to render it." If every one did this, the "system" would not matter a straw; so long as the majority do not, no system would make any difference.

A final word about industrial efficiency and the fiscal question. It follows from the views just expressed that in my opinion the artificial assistance to industry afforded by protection would at the present juncture have a disastrous influence by checking the salutary lesson to which the industrial world is beginning to respond. But beyond the immediate future my conviction, derived from what I have seen of the strength of their rivals, is that our manufacturers will not be able to compete indefinitely against the

handicap of closed markets and free imports. I regard Germany as a far more formidable competitor than the United States; she has more stability. The Germans, unlike the French, the Italians, the Americans and the British, have no special line of their own, but they can learn everything, except perhaps the French sense of elegance; and they are very deliberately learning. They can make things as solid and durable as the British, as light and convenient as the Americans; they build ships and engines and turn out cutlery as well as we can, they weave better; they make electrical and light automatic machines as well as the Americans; and in the application of science, to which the future belongs, they easily beat both.

I conclude with a point which is, perhaps, not strictly or not immediately relevant. The Gospel of Ease has left one fatal legacy for which neither economic nor any other pressure offers a cure. I mean the declining national vitality. This is by far the most important question which my investigation has revealed. Beside it all others sink into insignificance. I intended to deal with it, and shall do so hereafter. Here I will merely say that such public references to it as I have seen reveal a totally inadequate conception of its importance and a misapprehension of the facts. It is not among the aristocracy or the bourgeois classes that the most rapid decline has taken place, as many suppose, but in purely industrial communities and among the pick of the industrial population. And it is a progressive evil, which promises slow national extinction. The only possible remedy I can see is ruralisation, not by garden cities or fancy experiments, but by fostering a real and large agricultural population, which can only be accomplished by peasant proprietorship or small holdings. The ownership of land, or at least its possession and control, is the only bait that will lure men from the town.

SUPPLEMENTARY CHAPTER.

FACTORY LAWS AND CONDITIONS.

I HAVE not much to add under these two heads. Factory laws and regulations are continually undergoing revision, and many minor changes have taken place during the last three or four years, particularly in some of the American States; but they are too small in themselves and too partial in their application to produce an appreciable difference in the general situation. Until the American codes show a substantial approximation to European standards and the law is more effectually enforced, it is unnecessary to revise my previous comparison in detail. It will suffice to say that the process of approximation is going on slowly. In Germany an important law was passed at the end of 1908 affecting the employment of women and children. It applies to all industrial establishments (*Betriebe*) in which more than ten persons are employed. Youthful workers (under 16) may not be employed before 6 A.M. (previously 5.30) or after 8 P.M. (previously 8.30); and after the day's work they must have an interval of not less than eleven hours' complete rest. Women may not be employed between 8 P.M. (previously 8.30) and 6 A.M. (previously 5.30); on Saturday and the eve of a holy day they must not be employed after 5 P.M. (previously 5.30). The *maximum* daily hours are reduced from 11 to 10 on ordinary days, and from 10 to 8 on Saturday and the eve of a holy day. This reduces the statutory normal week from sixty-five to fifty-eight hours, a large step in approximation to the English standard. The period of eleven hours' complete rest after work, granted to children, is also extended to women. Further, the statutory period of absence for lying in is extended from four (or six) to eight weeks in all before and after confinement; return to work is only permitted on proof that at least six weeks

have elapsed since confinement. Employment in coke works and the conveyance of building materials is prohibited. Several minor regulations give further protection to women and children in regard to the taking home of work, the granting of permits and exceptions for over-time, night-work, special occupations and circumstances, etc. Most of the provisions of the new law come into operation at the beginning of 1910.

With regard to factory conditions the only point which seems worth noting is that time has confirmed the observations made above on pages 339-341 concerning the activity of English manufacturers in learning the lessons taught by their competitors and in bringing their plant up to date. During the winter of 1907-08 I went through a large number of workshops in several of the most important manufacturing centres in England, including some which I had visited five years before. The change was very noticeable. I found workshops re-constructed, re-organised and re-equipped, old appliances replaced by new, the most recent tools and machinery installed and a general air of renovation.

The capacity of English manufacturers to recover lost ground is illustrated in a very convincing way by the present position in regard to two important fields of industry—machine tools and boot-making. Machine tools might be called the very marrow of modern manufacturing; they represent power, speed and precision applied to the working of metals and especially of steel. All machinery, and almost everything else containing metal, is made with their aid; many things are made entirely by them. In short they are all-important, and a nation's mastery of machine tools is as good an index to its position in the general race as any other. When England was supreme and without a serious rival, in nothing was its supremacy more marked. Machine tools had to be invented in order to make the other things that had been invented, particularly steam engines, and they were invented here. Born in London, they grew up in Manchester, mainly through the genius of Whitworth; and Manchester, Leeds and Glasgow became the great sources of supply. They remained so for many years, until in comparatively recent times American ingenuity took hold and introduced some new principles

which greatly increased the speed and economy of production. They made machines of new types and applied them in a new way, and their methods began to tell in the general market. British makers were slow to see it and they lost ground. American machines found their way into British workshops, because none were made at home to do the same work in the same way. The American machine tools did not cover the whole ground, but they captured a good deal of it. It is entirely characteristic of the merits and defects of American work that while they excelled in the production of small machines designed to perform many processes rapidly, cheaply and accurately, and especially to save labour by automatic working, they have never succeeded in making machines to do big, heavy work satisfactorily.

The advent of the bicycle some twenty years ago contributed more perhaps than anything else to bring matters to a crisis. Bicycles are made up of a great many small parts, which are cut and shaped by machinery from the bar, and economy was greatly promoted by American methods and machines, which produce the parts accurately to a standard size with extreme rapidity. British manufacturers were obliged to import machines to do a great deal of the work, which is precisely of the kind suited to American mechanical genius. It could no longer be disguised that there was something in these new-fangled notions, and gradually it was realised that it was a very substantial something, applicable to a great many other things besides bicycles. Alert men who began by importing and repairing American machine tools in the centre of the bicycle industry at Coventry went on to make their own of similar design; and gradually the older makers in Manchester, Leeds and elsewhere woke up to what was going on. What did they do? Well, they neither retired from business nor let the market slip away from them; nor did they start hurriedly imitating American models. They rather set their brains to work, studied the new ideas, assimilated their advantages and adopted them without abandoning the strong points in their own traditional methods; they combined the two.

And as luck would have it just while this was going on an immense change was wrought over the whole field by the application of "high speed steel," that is very hard

alloy steel, to machine tools. It had the effect of greatly accelerating all machinery processes. This again was an American idea, brought forward at the Paris Exhibition of 1900; but it has had an unexpected result. British manufacturers took it up with great energy, both the makers of steel and the makers of machine tools. Sheffield has always been supreme in the production of fine steels, and the advent of high speed steel has only served to confirm and emphasise its superiority, which rests on the double basis of workshop skill and technical knowledge, combined with rare completeness by the intimate co-operation of manufacturers with the metallurgical school. High speed steel has vindicated Sheffield, which is without a serious rival in its production; and it has also vindicated British machine-tool makers in a very interesting way. It is easy to understand that the increased rapidity of working the tool, whether it is doing cutting, drilling, milling, grinding or other work, puts a corresponding strain on the machine, and the more solidly constructed British article stands it better than the lighter and weaker American one. Thus a six-inch British lathe will do the work of an American eight-inch one.

British makers, then, have recovered their lost ground and are once more ahead. And not only in regard to high speed steel. Their machine tools to-day are more varied and more economical because more purposefully adapted to particular work than the American. The American plan is rather to adjust the work to the tool than the tool to the work. They make standard patterns and turn out a quantity of each, and they make nothing else until those are exhausted when they make fresh standard patterns. The customer has to take what they have whether it exactly suits him or not. British makers retain more freedom and adjust their tools to particular requirements. They are also at the present time well ahead in actual speed for some classes of machines. Last winter Americans were coming round inquiring how it is done. This is not said as a matter of pride or boasting but of plain fact, to illustrate the power of recovery possessed by British manufacturers, their ability to learn from competitors and improve upon the lessons taught when compelled by necessity. The next turn of the wheel may again reverse the position

but never again will our mechanical engineers go to sleep as they did or ignore the march of events in other countries.

The story of the boot trade is different but equally interesting. Boot-making by machinery is wholly an American development. It began with the sewing machine, which was first effectually worked out in the States though previously invented in Europe, and gradually extended to other processes. English boot factories, which are situated chiefly in Northamptonshire and Leicestershire, were compelled to follow suit but found themselves dependent on American machines. Some machines had been invented here long ago, but they had never been taken up and effectively developed. American makers were not slow to take advantage of the situation, and they elaborated a system of letting out their machines on a royalty, which tied the English manufacturers hand and foot and proved not only very costly but extremely oppressive. In spite of this handicap the home trade began to make headway against American boots and shoes, which at one time threatened to swamp the market. The manufacturers not only equipped their factories with machinery but also adopted the American styles, which had found great favour with the public, and eventually succeeded in turning out goods equally attractive and cheap and at the same time of better quality because made of better leather. The factory trade was revolutionised. Meanwhile attempts were made to produce English boot-making machines, as well as machine-made boots, in competition with the Americans; but the royalty system proved a most formidable obstacle. It was gradually tightened for the express purpose of strangling the English trade by a method of "linking up" introduced into the agreements under which machines were leased. Boots, it should be understood, are manufactured by a series of processes, each of which requires its own set of machines. The agreements were so worded that a manufacturer hiring a machine for a particular process was bound not only to use no machine of any other make for that process but also to use that machine only on material upon which the previous process had been performed by another machine from the same makers. Thus the processes were linked up one after another, and all of them had to be

performed by American machines, so that a manufacturer wishing to use an American machine for any particular process, say welting, was compelled to get all his machinery for every process from the same source and was practically forbidden to use any other machinery at all. And in order to enforce this arrangement effectually the American makers secured the right, under the terms of the agreement, of entering the factory at all times and inspecting the machinery, which enabled them to detect the presence of a chance interloper and at the same time push the adoption of any new or improved plant of their own.

Nevertheless native enterprise was not entirely crushed. English machines were designed and made to perform all the operations, for the master patents have long run out, and the American monopoly could only be maintained by the constant introduction of small improvements. The boot manufacturers, however, were for the most part firmly persuaded that some processes at least could only be performed by American machines, and to obtain these they had to bind themselves, as explained, in respect to all the others processes. That English makers were competent to supply a factory complete, and how the leasing system prevented them is best proved by a specific case, in which it broke down. One day the American agent came into one of the largest factories in Northampton and there found a strange machine at work. The owners denied that it infringed the agreement and refused to remove it, but what happened? They promptly received a notice demanding the return of the whole of the American machines, which practically meant their entire equipment, within twenty-four hours. That amounted to stripping the factory, and they were full of orders. But the peremptory treatment put their backs up and they resolved to run the risk. They returned the American machines and ordered a complete installation from a young firm of boot-machine makers at Rushden. The order was completed, and so successful was the change that they not only turned out boots as good as before and as fast, but the relief from the oppressive royalty system enabled them to raise wages and shorten hours and yet sell their boots cheaper. This can be understood when I explain that a machine, which would cost (say) £200 to buy outright,

would at the end of twenty years under the leasing system have cost the manufacturer something like £4,000 in royalties and then it would not be his property.

I have told this story before with more detailed information about the history of boot machinery in the Engineering Supplement of *The Times:* but it is not generally known and will bear telling again. The name of the Northampton firm is C. & E. Lewis. They are two brothers who started life as workmen and now own the largest private boot factory in the world. Their boots are admitted to be of first-rate quality, and they are sold at the retail price of 10s. 5d. a pair. I believe the brand is called the 'Cable".

The whole situation has recently been changed by the Patent Act of 1907 which contained a clause specially inserted for the boot trade and nullifying the boycotting provisions in leasing agreements. At the same time the Act compels American makers of boot machinery to manufacture in this country, so that English makers can now compete on fair terms. This Act, by the way, is having a substantial effect in increasing productive employment in this country. The boot trade is only one of several affected by it.

Wages and Hours.

A great deal of official information has been compiled about wages and hours of work, and some of it is so exactly fitted to the purpose of this book that I reproduce it freely with a strong sense of obligation.

Wages.—In the autumn of 1905 the British Board of Trade entered on a special inquiry into some of the more important conditions of industrial life in several countries. The first volume, dealing with the United Kingdom, was published early in 1908 (Cd. 3864), and the second, dealing with Germany, later in the same year (Cd. 4032). I shall have occasion to make repeated reference to these volumes. Rents and prices were the chief subjects of inquiry, but information was also obtained about wages, hours of work and other conditions. The *data* were obtained by inquiry on the spot in a large number of representative towns, namely, ninety-four in the United Kingdom and thirty-three in Germany, widely distributed over both countries and including the capitals. The results are summarily

compared in the volume on Germany, from which I extract the following table relating to rates of wages in England and Germany. They have reference to three groups of industries—(1) building, (2) engineering, (3) printing. These industries are practically ubiquitous, and wages in them are to a considerable extent subject to standard rates, which can be ascertained with sufficient accuracy and therefore afford a fair measure of comparison, though the limitation should not be forgotten. If other industries were taken it is probable that in some cases the comparison would be more in favour of Germany and in others less so. As instances of the former I would refer to the recent report of a deputation of Yorkshire textile workers, who investigated the corresponding centres in Germany, and found weavers' wages 5 per cent. better all round than those paid by the best firms at home. At Forst they are 12½ per cent. higher than at Batley. In the scribbling and spinning departments, on the other hand, they are less (*The Times*, February 6, 1909).

Rates of Wages in England and Germany.

Trade.	Predominant Range of Weekly Wages.		Ratio of German to English rates, the latter taken as 100.
	England.	Germany.	
Building—	s. d. s. d.	s. d. s. d.	
Bricklayers	37 6 to 40 6	26 11 to 31 3	75
Masons	37 2 „ 39 4		
Carpenters	36 2 „ 39 4	26 11 „ 31 3	77
Plumbers	35 4 „ 39 9	24 0 „ 28 6	70
Painters	31 6 „ 37 6	24 0 „ 29 8	78
Labourers	23 6 „ 27 0	19 6 „ 24 0	86
Engineering—			
Fitters	32 0 „ 36 0	26 0 „ 32 0	85
Turners	32 0 „ 36 0	27 0 „ 33 0	88
Smiths	32 0 „ 36 0	28 6 „ 33 0	90
Pattern-makers	34 0 „ 38 0	25 6 „ 30 0	77
Labourers	18 0 „ 22 0	18 0 „ 22 0	100
Printing—			
Compositors	28 0 „ 33 0	24 9 „ 25 11	83
Average of above			83

These figures correspond with my own conclusions stated above (pp. 379-83) as closely as can be expected, in view of the different fields of inquiry, and they more than justify my criticism of the earlier official figures on p. 379. My summary conclusion that German rates are about four-fifths of English ones is quite confirmed. The Board of Trade inquiry makes them out a little higher than four-fifths; mine made them out a little lower. I think this difference may be fully accounted for by the rise in Germany between the beginning of 1903, when my inquiry took place, and the autumn of 1905. Wages in Germany are tending steadily to approximate to the English standard. That seems to me the most significant conclusion to be drawn from these comparisons, and I believe that every fresh one will confirm it. The report on Germany does, in fact, contain later information pointing in that direction. Supplementary inquiries made in March, 1908—two and a half years later—demonstrated an upward movement in German wages to the extent of the following increases over the 1905 figures: Engineering, 8 per cent.; building, 7 per cent.; printing, 11 per cent.; textile industries, at Aachen (wool), 5·6 to 9 per cent., at Mülhausen (cotton), 5 to 20 per cent.; municipal employees, 7 or 8 per cent. Changes in English rates between October, 1905, and October, 1907, are thus officially stated (Cd. 3864, p. xli): building, slightly higher in three trades (bricklayers, carpenters and plumbers), slightly lower in three (masons, plasterers and painters); engineering, a rise of 1·5 per cent.; printing a rise of 1 per cent. English wages tend to rise, but not nearly so fast as German.

With regard to the United States an immense quantity of official statistics about wages down to the year 1906 have been published by the Department of Commerce and Labor (Bulletin No. 71). I was in hopes that they would furnish matter for completing the comparison made above; but they are collected in a different manner and are not properly comparable; to tabulate them with the others would be misleading. The *data* were collected from 4,034 establishments distributed in all parts of the United States, and the results are reduced to averages by finding the aggregate hours worked per week by all the workers in each trade and their aggregate earnings per hour, and then dividing these ag-

gregates by the total number of workers. The figures for wages, therefore, represent earnings, and they are stated in terms of hourly, not weekly, wages. To find the weekly wages it is necessary to multiply them by the number of hours worked in the week. The returns were furnished by employers and represent the amounts paid by them. This is obviously an entirely different thing from the standard weekly rates on which the English and most of the German figures are based. Earnings may be more or less important than rates of wages according to the point of view; but in any case they are different. I give the summary figures, however, for the same trades, as far as possible, for the year 1905.

Average Weekly Earnings in United States, 1905.

Trade.	Weekly Earnings.
	s. d.
Building—	
Bricklayers	110 6
Masons	96 0
Carpenters	73 7
Plumbers	94 0
Painters	69 0
Labourers	36 5
Engineering—	
Machinists	62 9
Smiths	68 0
Pattern-makers	65 6
Labourers	36 0
Printing—	
Compositors	95 0

The most striking thing is the disproportionately high wages in the building compared with the engineering trades, and especially the wages of bricklayers. There is evidently something abnormal here, and one factor is probably trade union action. I left the building trades out of my inquiry because they are non-competitive, but they are for other reasons an unsatisfactory measure of comparison. They vary too widely and capriciously according to time and place to be a valid index of conditions. The hourly rates for bricklayers in seventy-one American towns ranged from thirty-four cents to seventy-five cents in 1905. To strike an average between such widely separated conditions is merely misleading. I am more than ever convinced that in making international comparisons of this kind a much truer conception is gained by narrowing the field and com-

paring like as far as possible with like than by ranging over a vast area and boiling down widely different conditions into an imaginary product called an average. If we take the engineering trades and leave out places which have no counterpart in Europe, such as Montana, Texas and California, the American figures—bearing in mind that they represent earnings—are quite in keeping with my previous conclusions that wages in the United States are broadly about half as high again as in England. The wages of labourers stated above also confirm this estimate.

The American statistics referred to were not compiled for the purpose of international comparison, but mainly for comparing one year with another in the States, and for that purpose they are both valid and full. They show a marked and general rise in wages during the decade 1897-1906. The following table gives the index number for each year in the trades already dealt with, the mean for 1890-99 being taken as 100:—

Relative Wages per Hour.

Year.	Building Trades.	Engineering Trades.	Printing Trades.
1897	101·3	99·7	99·2
1898	102·8	99·0	101·2
1899	105·3	99·1	103·6
1900	109·9	101·5	109·3
1901	114·5	104·7	110·7
1902	121·1	108·2	114·2
1903	126·8	112·2	116·1
1904	129·7	113·9	118·9
1905	132·2	114·0	120·6
1906	140·2	117·9	125·9

One other point in connection with wages may be mentioned. Profit-sharing, or rather co-partnership, has lately received a marked impetus in England by the institution of a scheme in the large works of Furness, Withy & Co., a shipbuilding and engineering firm at Hartlepool in the autumn of 1908. It was accepted by the men and the trade unions on a vote. The principle is also extending in gasworks, several large concerns having followed the example of the South Metropolitan Gas Company.

Hours.—Hours are more easily and satisfactorily compared than wages; there is neither the same ambiguity nor the same range of variation. I have therefore constructed the following table from the official sources used above; that is to say, I have added figures for the United States to a comparative table given in the Board of Trade Report for Germany. They may not be absolutely on all fours, but they are quite sufficiently so for a general comparison.

AVERAGE WEEKLY HOURS OF WORK IN 1905.

Trade.	Average Hours per Week.			Ratio of German and American hours to English taken as 100.	
	England.	Germany.	U.S.A.	Germany.	U.S.A.
Building—					
Bricklayers and Masons	52½	59	46·8 / 47·8	112	90
Carpenters	53	59	48·5	111	91
Plumbers	53½	58	47	108	87
Painters	53½	59	48	110	89
Labourers	52½	59	55	112	104
Engineering—					
Fitters	53	59½	56	112	105
Turners	53	59½	56	112	105
Smiths	53	59½	56·7	112	107
Pattern-makers	53	59½	54·6	112	
Labourers	53	59½	56·6	112	103
Printing—					
Compositors	52½	54	53	103	101

The exceptional and privileged position occupied by the skilled building trades in the United States is brought out more clearly by the hours than by the wages. If other industries were included it would be still more apparent. For instance, in the cotton trade the average weekly hours are over 60, in rolling mills over 65, on blast furnaces 84, in the boot and shoe trade nearly 57, in leather trades nearly 60; and so on. In fact the table happens by a curious coincidence to contain the three large branches of industry in which the hours worked are the lowest and quite unrepresentative of general industrial conditions in

the United States. General conclusions drawn from them would be most fallacious. I have only given them because they are the trades selected for the Board of Trade's inquiry, and it is interesting to see how the three countries stand in regard to them.

These official inquiries afford confirmation of the tendency, which I have pointed out in the chapter on Hours, towards a diminution of the working time in both Germany and the United States and an approximation to the English standard. The Board of Trade Report for Germany states that "the rise in wages has been accompanied by some tendency to reduction of hours," and it gives a few scattered instances. In Germany, as already stated, the hours of women and young persons will shortly be reduced by law to fifty-eight a week. The following table, relating to a well-known manufacturing concern at Elberfeld and compiled from private information, shows well the double movement over a long period :—

AVERAGE WEEKLY WAGES AND HOURS.

Year.	Wages.		Hours.
	Male Workers.	Female Workers.	
1867	15·84 marks.	12·96 marks.	71
1878	22·32 „	14·64 „	71
1907	25·38 „	16·61 „	60

The average earnings of male workers have risen 60 per cent., of female workers 28 per cent., while hours have been reduced from 71 to 60. Moreover a remarkable change has taken place in the proportion of the sexes. In 1878, 60 per cent. of the workers were female and 40 per cent. male; in 1907 the proportion was reversed.

In the United States Report very full information is given for a large number of trades over a series of years. The tables, which are far too voluminous for reproduction, reveal a general, but neither uniform nor rapid tendency to fall. The following index numbers represent the relative

hours worked in certain standard trades in the year 1906, the mean of 1890-99 being taken as 100. Cotton spinners 98·9 (male), 98·6 (female); weavers 97·7 (male), 99·4 (female); hosiery knitters 99·0 (male), 97·6 (female); woollen weavers 98·3 (male), 98·0 (female); blast furnacemen 100; iron and steel heaters 99·6; heaters' helpers 101·6; rollers 98·9; smiths 98·1; boilermakers 95·2; machinists 94·4; moulders 95·1; pattern-makers 94·2; brass finishers 91·6; bricklayers 91·9; carpenters 89·7; painters 89·7; plasterers 90·0; plumbers 90·2. The largest reductions, it may be noticed, are in the building and engineering trades; and they go far to account for the exceptional positions occupied by those trades in regard to hours.

Workmen's Compensation and Insurance.

The whole position with regard to compensation for injury has been altered in the United Kingdom by the extremely important Workmen's Compensation Act of 1906, which came into operation in July, 1907. This Act introduced some entirely new principles in labour legislation, and it may be regarded as the first-fruits of the general election of 1906, which returned to Parliament a strong labour party. It changed the position in two ways—(1) by enlarging the rights of persons entitled to claim compensation, (2) by extending the right of compensation to persons not included in the previous laws. The changes under the first head may be tabulated thus :—

Old Act.	New Act.
1. Minimum period of incapacity entitling to compensation, two weeks.	Reduced to one week, and if incapacity lasts two weeks or more compensation payable from date of injury.
2. Accidents entitling to compensation must happen "on, in or about" the employer's premises.	No restriction as to place; for instance, a man sent on a message and knocked down in the street can claim.
3. Claim can be refused on the ground of serious and wilful misconduct on the part of the injured workman.	Serious and wilful misconduct is no defence against a claim in cases of death or serious and permanent incapacity.

Old Act.	New Act.
4. Diseases not specifically included, though anthrax made a legal accident by decision of the court.	Several diseases included—anthrax, ankylostomiasis, poisoning by lead, mercury, phosphorus and arsenic; others added since by order issued by Home Office.
5. Dependants limited to wife, husband, parent and child.	Enlarged to include illegitimate children and parents and grandparents thereof; brother and half-brother, sister and half-sister
6. Amount of compensation limited to half wages.	Raised to full wages (not exceeding 10s. a week) for persons under twenty-one, and increased in proportion to probable earnings.
7. Compensation based on actual earnings in the service of employer who is liable.	All earnings to be taken into account.
8. Commutation of weekly compensation for lump sum allowed by free agreement.	Agreement for commutation liable to be set aside in certain cases if amount insufficient.

The most far-reaching change is No. 4, the inclusion of diseases. It is difficult to see why any disease contracted in the course of employment should not on the same grounds be judged an accident; for instance, bronchitis, tuberculosis or any infectious disease caught from a fellow-worker. A man working in pitch claimed compensation for cancer, and the claim was allowed by the court. Catching cold is more likely to be the fault of the premises than falling downstairs and may involve much more serious consequences.

A far more momentous change, however, both in principle and in effect, is the extension of compensation to classes previously excluded. Hitherto all the laws relating to compensation for accident, passed in every country, have been based on the principle of "industrial risk". The theory is that persons employed in certain occupations are exposed to special risks incidental to their employment; and since these risks are incurred for the benefit of the business it is only just that injuries arising out of them should be compensated by the employer. It is held by some theorists that the cost eventually falls on the consumer and is therefore paid by society at large; but that is certainly not always the case. At any rate the immediate

cost is placed upon the employer, and the main point is that special risk is incurred by the employed. Accordingly the occupations, to which the law applies, are named, and all others are outside it. This principle has been entirely abandoned in the new English law. Instead of granting compensation to selected occupations, which are named, it grants the same privilege to all occupations with a few exceptions; and it only names the exceptions. These are: (1) persons in the naval or military service of the Crown; (2) police; (3) persons employed otherwise than in manual labour and earning more than £250 a year; (4) out-workers (persons working on material furnished by the employer but not on his premises); (5) members of an employer's family living in his house; (6) persons casually employed for some purpose not connected with the employer's trade or business.

Thus compensation can now be claimed by domestic servants, shop assistants, clerks, sailors, hospital staffs, theatre staffs, church staffs, persons employed by the State, the municipality or any other body, musicians, teachers, sick nurses, and many more, although they run no more risk than their employers, and no more than everybody runs every day. The sole ground is that they are employed by some one else, who has to pay for accidents befalling them. It may be said that the entire population is thereby divided into two classes—employers and employed, one of which has to pay the other an unknown and incalculable sum of money, solely on the ground of their relative position as givers and receivers of employment and pay. It is calculated that some 6,000,000 persons have been added to the list of those entitled to compensation.

One is tempted to speculate on the ulterior bearing of this remarkable step. In a sense it is highly socialistic, but the broad demarcation laid down between employers and employed involves a juristic sanction of that relationship which is antagonistic to the collectivist ideal. It is a personal relationship recognised by the State, but not managed or controlled by it. There is here no question of State insurance; employers are made liable by the law, but they are left to fulfil their obligations as they please; the State stands aside. For the most part they have chosen to

meet the liability by voluntary insurance effected with commercial agencies. The insurance companies drew up schedules for the several classes of occupations as best they could, and at the same time they took the opportunity to raise the existing rates charged under the old law. Their general experience was that the tendency of claims to increase and accumulate had rendered the old rates inadequate, and in view of the increased liability under the new law they were faced with the necessity of raising them by substantial amounts, which vary, according to the class of occupation, from 20 or 30 per cent. to as much as 120 per cent. The burden on employers has thus been heavily increased, and the probability, or rather certainty, is that the process will continue. Some time must elapse before the working can be clearly seen, but the result of the first year's experience has been to cause a further rise of some insurance rates. Litigation has also been much increased. A return by the Home Office issued in October, 1908, showed that disputed claims in England and Wales, giving rise to judicial proceedings, rose from 2,532 in 1906 to 3,330 in 1907, the latter year including six months' working of the new Act. In addition, 9,349 claims were settled by agreement or in formal arbitration, and nearly half of these were taken under the new Act. But the great bulk of the claims are paid without any proceedings, and of such there is no record.

Another Act of equal or greater importance for the benefit of the poorer classes, and an entirely new departure, is the Old Age Pensions Act of 1908, which came into operation in January, 1909. It entitles all persons over seventy years of age, who fulfil certain conditions, to a free pension for the rest of their lives. The conditions are that the recipient must not have an income exceeding £31 10s. per annum, and must have been a British subject resident in the United Kingdom for twenty years. Paupers (persons in receipt of poor law relief), lunatics and imprisoned criminals are disqualified; also a person who has habitually failed to work according to his ability, opportunity and need for the maintenance of himself and those legally dependent on him, unless he can adduce certain specified proofs of thrift. The pension is fixed on a graduated scale according to the recipient's means. If they do not exceed £21 a year

the full pension of 5s. a week is payable; for every £2 12s. 6d. of income above £21 the pension is lowered by 1s. There are elaborate rules for estimating the means of claimants. The Act is administered by the local authorities and the cost is defrayed by the Exchequer. The number of persons who came into receipt of pensions in January, 1909, was over 600,000, and the cost for the first year will be approximately £9,000,000.

The chief criticism of this measure is that the relief is non-contributory, that it puts a premium on idleness and wastefulness and penalises thrift. At the same time the problem of finding the money, which will increase year by year, has led to a study of the German system of national insurance. It has been repeatedly described by other English writers besides myself, though not always very clearly: but British statesmen appear to have been ignorant of its merits until after the elaboration of their own old age pension scheme, the difficulties of which set them studying the German system. That is thoroughly characteristic of our political procedure. Legislate in haste and study the subject at leisure is still our maxim.

In the United States no advance appears to have been made towards a system of compensation for injury at all comparable to those obtaining in Europe. In a paper on industrial accidents by Mr. Frederick Hoffmann in the Bulletin (No. 78) issued by the Department of Commerce and Labor for September, 1908, the writer observes that "no national investigation of the subject has been made to determine the true accident risk in industry, and the statistical *data* extant are more or less fragmentary. . . . American factory inspectors' reports, as a rule, are unfortunately very defective and inconclusive." Nevertheless he essays a detailed estimate from such *data* as are available, from which it appears that accidents, both fatal and non-fatal, are excessively frequent and increasing, particularly among railwaymen. Between 1897 and 1906 the fatal accidents increased from 976, or 6 per 1,000, to 2,310, or 8 per 1,000; non-fatal ones increased from 13,795, or 85 per 1,000, to 34,989, or 122 per 1,000. He gives the comparative frequency of accidents to coal miners as 3·10 in the United States to 1·29 in the United Kingdom, and among railwaymen as 2·50 in the United States to 0·98 in Germany.

Housing.

The Board of Trade Reports already drawn upon for information about wages and hours also take cognisance of housing, and here I am indebted to them for an important correction. It is clear from the much fuller *data* they contain that my estimate of the relative cost of rent in England and Germany is wrong as a general statement. The basis of comparison was too small and not sufficiently representative to permit of correct generalisation. In fact I fell into the very error to which I have repeatedly drawn attention in connection with other subjects. The correction is all in favour of Germany. It appears that I put the figure for Germany too high and that for England too low, and the double error makes the discrepancy serious. I was prepared for the first error, having indicated the probability of it myself on page 436; but the extent of it surprises me. The under-statement of rent in England is very much less than the over-statement for Germany, and is fully accounted for by my selection of industrial districts and the exclusion of the highly rented metropolitan and Tyneside areas, with some others. A fact brought out very clearly by the Board of Trade investigation and worthy of note is that in England as a rule in purely industrial towns rents are lower and over-crowding less than in trading centres, and particularly seaports. The same holds good to some extent of Germany. It refutes the common and constantly repeated fallacy that over-crowding and the housing difficulty in general are the results of the "factory system".

The following summary comparison is given in the report on Germany:—

Rents in England and Germany.

Number of Rooms per Dwelling.	Predominant Range of Weekly Rents.		Ratio of German to English taken as 100.
	England.	Germany.	
	s. d. s. d.	s. d. s. d.	
Two rooms . .	3 0 to 3 6	2 8 to 3 6	95
Three rooms . .	3 9 „ 4 6	3 6 „ 4 9	100
Four rooms . .	4 6 „ 5 6	4 3 „ 6 0	102·5

If we take the means of the predominant range and divide them by the number of rooms, we get this result, that the mean weekly rent per room is in England 1s. 4½d., in Germany 1s. 4⅘d. The difference is only one-eighteenth of a penny; they are virtually identical, and such balance as there is stands in favour of Germany. By a more elaborate calculation the report reverses this position and makes the German level a shade higher, as 101 to 100. The difference is immaterial; to all intents and purposes we must say that on a broad average rent is about the same in both countries. My former calculations resulted in the conclusion that the mean rent per room is 1s 3d. in England and 2s. in Germany. I was deceived by the comparatively high rents in Rhineland and particularly in Dusseldörf, which is as exceptional as Newcastle in this country. But two points are to be noticed.

The first is that dwellings of four rooms are dearer in Germany; the advantage lies entirely in the two-roomed dwellings. Now two-roomed dwellings are very numerous in Germany; the working classes really live in dwellings of two and three rooms, except in some of the Saxon towns and a few others; four-roomed dwellings are quite exceptional. In Stuttgart, for instance, 98·7 per cent. of the dwellings in the working-class quarters contain less than four rooms. In English towns, on the contrary, two-roomed dwellings are exceptional, apart from London and a few other places; and four-roomed dwellings are the rule. If, therefore, the German working classes enjoyed the same accommodation as the English they would have to pay more for it. The second point is that in England rent includes local taxation; in Germany it does not. The report estimates that if allowance be made for this difference German rents stand to English as 123 to 100.

In other matters the report, which contains a mass of interesting detail, fully bears out my account of German housing. A captious critic has complained that my book ignores the good side of German housing. He evidently meant town-planning and municipal ownership of land, about which we hear so much; for I have fully noted other good features of German housing. So I will take the opportunity to say that much misapprehension is current about town-planning in Germany. I have nothing to say against it; it is only common-sense. But reformers, in their eager-

ness to urge its adoption here, have conveyed the impression that German towns at large have been turned into garden cities by town-planning. This book, however, has nothing to do with reforms; it is an attempt to state what is, which is perhaps not a bad preliminary to reform, though reformers often, if not generally, seem to think it necessary to say what is not. I have described the German towns and housing as truthfully as I can without any ulterior object; and if they are no better, it is not my fault. The truth is that town-planning and all that goes with it is very partially and irregularly applied and its benefits are mainly prospective. Many places have as yet done nothing in that way, others have done very little; those which have done most did not happen to come within my inquiry. In any case town-planning has no effect upon antecedent conditions, which cover most of the housing; it is preventive, not curative.

Cost of Living.

Still more voluminous statistics from the same official sources are available for the cost of necessaries than for the previous subjects. The following comparative table is given in the Board of Trade Report on Germany:—

Predominant Retail Prices in October, 1905.

Commodities.	England.	Germany.	Ratio of German to English, taken as 100.
	d. s. d.	s. d. s. d.	
Sugar, white, per lb.	0 2	0 2¼ to 0 2½	119
Butter, per lb.	1 1¼	1 1 „ 1 2¾	105
Potatoes, per 7 lb.	2½ to 0 3½	0 2¼ „ 0 3	88
Flour, wheaten, per 7 lb.	8 „ 0 10	0 11½ „ 1 1¾	140
Milk, per quart	3 „ 0 4	0 2½ „ 0 2¾	75
Beef, per lb.	7½ „ 0 [1]8½ / 5 „ 0 6[2]	0 7¾ „ 0 8¾	122
Mutton, „	7½ „ 0 9[1] / 4 „ 0 5[2]	0 7¾ „ 0 9¾	137
Pork, „	7½ „ 0 8½	0 8¾ „ 0 11	123
Bacon, „	7 „ 0 9	0 8¾ „ 0 11	123
Coal, per cwt.	9½ „ 1 0	0 10¾ „ 1 4	124
Paraffin oil, per gal.	7 „ 0 8	0 9½ „ 0 11	135

[1] British killed. [2] Foreign or Colonial.

The chief difference between these prices and those given in the table on page 469 (also compiled from official sources) is that the range of prices is less in the later table. In the German column, however, sugar is quoted at a much lower price than I made out. Otherwise there is no great difference, but the smaller range works out on the mean to the disadvantage of Germany. As I have pointed out the different national habits and customs make a bare comparison of prices almost useless as an index to actual conditions of living. The report endeavours to get over this by an elaborate calculation based on working-men's budgets and the amount actually spent on different articles. The summary conclusion is that an English workman, if he lived in Germany in the manner customary at home, would find his expenses raised by 18 per cent.; but if a German workman came to England and lived in his accustomed manner he would only find his expenses diminished by about 8 per cent.

The upshot is to confirm the previous conclusion that the cost of living is higher in Germany, but that national customs substantially reduce the difference in practice. The percentage of income spent on food by families of different grades of income is found to be as follows:—

Weekly Income.	Percentage spent on Food.	
	United Kingdom.	Germany.
25s. and under 30s.	66	62
30s. „ „ 35s.	65	59
35s. „ „ 40s.	61	58

The relative quantities of different kinds of food consumed by similar families in the two countries is expressed in the following table, which gives the ratio of German families to British, taken as 100:—

RATIO OF GERMAN CONSUMPTION TO BRITISH (= 100).

Kind of Food.	Families having Income		
	25s. to 30s.	30s. to 35s.	35s. to 40s.
Bread and flour .	84	89	99
Meat and fish . .	88	90	95
Eggs . . .	106	90	97
Fresh milk . .	159	130	140
Cheese . . .	66	78	78
Animal fats . .	113	115	120
Potatoes . . .	151	148	155
Sugar . . .	42	41	41

German families live very much less on sugar and somewhat less on bread and meat, but much more on milk, potatoes and butter, etc. With regard to meat the real consumption is probably not correctly represented, as in Germany it is sold without bone or fat, so that a nominal quantity contains more flesh than in England. Incidentally the report disposes of a great deal of nonsense talked about the consumption of horse-flesh and black bread in Germany by persons who for political reasons desire to make the worst of industrial life in Germany. Much evidence of the well-being of the German working classes has accumulated since the publication of this book, and largely from parties of English working men who have gone there to investigate for themselves. They have all returned impressed and surprised by the standard of comfort prevailing. The latest of these parties were the Yorkshire textile workers quoted above. "Any doubt," they say, "as to the nutritious value of the German diet is dispelled by the well-nourished appearance of even the humblest section of the working classes." They were astonished to find the German workers so "well conditioned and well circumstanced" and so little affected by unemployment. There is no doubt about their being well nourished and well clad; nor can any visitor deny the fact. But as I have pointed out their condition is in no small measure due to a factor which British workmen in particular should not forget, and that is, the habits

of the people themselves, the care of the home and the comparative absence of waste upon pleasure and vice.

For the United States the Department of Commerce and Labor has published (Bulletin No. 71) a mass of statistical *data* about prices down to 1906. It does not seem worth while to try to extract any figures parallel to those tabulated above for England and Germany. There is the same voluminous wealth of quotations and wide range of prices noted in pages 468-69 as occurring in the earlier statistics, and the result would not be such as to repay the labour. What is worth noting, however, is the movement of prices in the United States. Every food-stuff has risen in the last few years, with the sole exception of coffee, which has fallen. The relative prices of the principal articles in 1906 were as follows, the mean of 1890-99 being taken as 100:—

Beef	115	Milk	109
Mutton	124	Butter	108
Pork	137	Cheese	115
Bacon	150	Sugar	98
Veal	123	Rice	105
Poultry	129	Potatoes	114
Fish	116	Eggs	134
Bread	102	Tea	105
Flour	108	Coffee	94

If this table is compared with the one showing the movement of wages in the same period, it appears that the rise of wages is to a large extent counterbalanced by the higher price of commodities, so that what is sometimes called "real wages" shows little or no rise.

Trade Unions.

Much has happened and is happening of great interest in connection with trade unions and the relations of employers and employed.

The first point to notice is the strength of the unions. An international estimate, made on behalf of the unions at the end of 1906 and published in Berlin, gave the strength of the unions as 2,215,165 in Germany and 2,106,283 in the United Kingdom. I do not know on what these estimates are based, but they have been universally accepted and repeated. The figures for this country are considerably in excess of any official return. The membership of the unions

represented at the Trade Union Congress in 1908, *plus* the known unions not represented, amounted in all to less than 1,900,000. The estimate of the German unions appears to emanate from the Social Democrats; it represents an extremely large and rapid increase, which is still going on. At the end of 1907 the membership was estimated at 2,453,940. If these figures are even approximately correct, trade unions are now numerically far stronger in Germany than in any other country. The estimate given for the United States is 1,970,700, but it is only a guess. I think it highly probable that the organisation of labour is proceeding more rapidly in Germany than elsewhere. Organisation is congenial to the national character, and the improved economic condition of the workers enables them to combine. But the strength of trade unions depends less on the number of members than on their proportion to the whole number engaged in the same occupations, and on their finances. In both these respects the English unions still have the advantage. The great increase in Germany has been among the Social Democratic unions, or "centralised" unions, as they seem now to be called; their membership at the end of 1907 is stated to be 1,873,146. But the Christian unions have also grown rapidly and numbered nearly 300,000 at the same time. There were also some 80,000 "Christian Independent" unions, who presumably adopt the same position as the others but are non-Catholic or non-clerical. The independent unions have also grown, while the Hirsch-Duncker societies maintain their strength.

The next point to be noted is the extremely important Trade Disputes Act of 1906, which has changed the legal position of trade unions in the United Kingdom and had a far-reaching influence. In the chapter on Trade Unions I pointed out (pp. 539-40) that the Taff Vale case, in which the Taff Vale Railway Company obtained damages against the Amalgamated Society of Railway Servants for interfering with men engaged to take the place of strikers, had turned trade union effort more into political channels, and that some change in the law was probable. It was not long in coming. The General Election of 1906 demonstrated the force of the movement I had indicated, and showed that the Taff Vale case, in which some employers had

foolishly exulted, had given an enormous impetus to the agitation assiduously carried on by Socialists among the trade unions for a good many years, but with little visible effect. A joint body, called the Labour Representation Committee, consisting of representatives from trade unions and Socialist societies, had been formed before 1900 to promote the Parliamentary candidature and election of its own nominees; but at the election in that year it only got four members returned. The result of the Taff Vale case was at once to double the trade union membership of this body, which succeeded in getting twenty-nine of its candidates elected in 1906 and assumed the title of "Labour Party". In addition a number of direct representatives of trade unions, chiefly miners, were elected, and brought the total force bent on amending the law up to 52 or 53. The fact so impressed the Government that it promptly undertook to satisfy their requirements, and the Trade Disputes Act of 1906 was passed. It not only grants the immunity which trade union funds were supposed to enjoy under the previous law until the Taff Vale judgment, but goes very much further and confers upon trade unions and trade union officials privileges which are enjoyed by no other class. Briefly, it provides that the common law relating to "conspiracy" shall not apply to trade disputes; in other words it legalises acts done in furtherance of a trade dispute which are illegal in all other circumstances. It further provides that no action shall be entertained by any court against a trade union or its officials in respect of any "tortious" act committed by or on behalf of the union; in other words a trade union cannot be sued by persons injured by it. Also it expressly provides that acts done in connection with a trade dispute which may induce persons to break their contracts or may interfere with the trade, business or employment of other persons, shall not be actionable on those grounds. Lastly, it expressly legalises "peaceful picketing" for the purpose of obtaining information or of persuading any person to work or abstain from working. The trade unions cannot be congratulated on this flagrant piece of class legislation, which can only be called a gross abuse of power. It was not needed to restore trade unions to the position they had previously enjoyed, and the

original Bill introduced by the Government for that purpose was of a different character. The present Act was the direct result of political pressure brought to bear on a weak Prime Minister; it violates the principles of justice and equity on which the law officers and other legal members of the Government took their stand, but they were compelled to eat their own words and accept it. Nominally it applies to combinations of employers as well as to trade unions, and persons who know only the surface of industrial matters may therefore think it just. But the entirely different position occupied by employers' combinations makes the apparent equality delusive; and besides, that is not the real point. As I have pointed out above (p. 539) the great difficulty of the unions is not with employers but with non-union labour, and this Act is really directed against workmen who for reasons of their own will not join. It places in the hands of the unions a weapon of coercion which they have not previously possessed and leaves free labour in a much more defenceless position. That is why it is unjust, inequitable and undemocratic. But misuse of power generally recoils on those who indulge in it. The Taff Vale judgment was the result of a bitter determination to take advantage of the letter of the law to violate its spirit; it was a piece of persecution carried out in a vindictive spirit, and it has recoiled on those who secured or applauded it. The trade unions have got the upper hand again and armed themselves with a more effective weapon; if they misuse it, it will recoil on them in turn.

There are not wanting signs. Two things have followed the passing of this Act; one is a marked recrudescence of industrial restlessness, and the other is a failure of discipline within the unions and a lack of control by the leaders. How far these concurrent movements are connected with the Act and the irresponsibility which it has created and emphasised is a matter of opinion; but in one strike, which occurred in Belfast in the summer of 1907 and culminated in rioting and violence, the Act was loudly proclaimed as an excuse for excesses. The dispute was, in its inception, solely concerned with union *versus* non-union labour, and gross intimidation was practised under cover of the Act. In other more important disputes in 1908 no violence oc-

curred, but the advice and policy of the responsible leaders and spokesmen were set at nought in an unprecedented manner. That happened in two disputes of great magnitude on the north-east coast, one in the shipbuilding yards, the other in the engineering works. They were nearly simultaneous and both lasted for months. Both were cases of resistance to a demand on the part of employers for a reduction of wages on the ground of falling trade. A large number of unions were concerned in each dispute, and the majority of these accepted a compromise after negotiations with the employers; the rest refused and came out on strike, the shipbuilders on 21st January and the engineers about a month later. In the case of the former, their representatives had arranged terms with the employers and recommended the men to accept them, but the men refused to do so. The case of the engineers was still more emphatic. Negotiations were taken to the Board of Trade, where chosen representatives of both sides met and agreed on terms. The men were represented by the Secretary of the Amalgamated Society of Engineers, and the terms he agreed to were endorsed by the Executive of the Society. All was carried out with the fullest formality pertaining to collective bargaining and mutual agreement, and the compromise arranged was highly favourable to the men's side. Yet when it was referred to them for ratification with a strong recommendation from their own official spokesmen and leaders they rejected it by a large majority. Having entered into negotiations with the other side by the mouth of their appointed representative, they would have none of the bargain made by him on their behalf, although it only pledged them to accept less than half the employers' original demand, and that only if an arbitrator decided against them. They would accept no bargain whatever. Obviously the principle of collective bargaining, which is the great argument for trade unionism, is reduced to absurdity. The Secretary of the Amalgamated Society of Engineers evidently thought so, for he resigned his post.

Another somewhat similar case, but on a smaller scale, occurred in the boot trade, and further marked symptoms of unrest were shown by the cotton operatives. Twice during the winter of 1907-8 the admirable machinery for

composing differences in that great industry nearly broke down, and in the autumn of 1908 it did break down, involving one of the most extensive stoppages of work on record, though happily of short duration. In that case the breakdown was not caused by trade union insubordination, but a majority of the operative spinners voted against the recommendation of their own Executive to accept terms arranged with the employers. In all these disputes it was felt that a different spirit was in the air, and that none of them would have gone so far as they did if the unions had been under the firm and temperate control which in the past had secured industrial peace for so many years in the cotton trade.

The general upshot, however, has been to confirm the observations at the close of the chapter on Trade Unions, which foreshadowed the possible recrudescence of strife, but pointed out that the stability gained in mutual relations of late years would not be wholly lost or in vain. All the disputes mentioned above have ended in reinforcing the principle of mutual agreement and in strengthening the machinery for composing differences. The most notable advance made in that direction is a scheme of conciliation, similar to those existing in all the large manufacturing industries, entered into by the railway companies and their employees in 1907 after an acute and threatening agitation. Its acceptance was due in a considerable measure to the tact of Mr. Lloyd George, then President of the Board of Trade, who conducted negotiations between the two sides; but I have no doubt that the scheme was really devised by a permanent official of the Board, probably Sir H. Llewellyn Smith. It was certainly devised by some one with an intimate knowledge of industrial matters, and to him, whoever he was, the main credit is due. It was a very skilful piece of work; it offered the Amalgamated Society of Railway Servants, which was in no position to declare a strike, a welcome means of retreat from a difficult position without loss, and gave the railway companies an opportunity of proving their reasonableness and goodwill without abandoning the principle of refusing to negotiate with an outside person. Altogether a landmark in the progress of mutual conciliation; but not to be repeated every day. The ex-

travagant praises bestowed on Mr. Lloyd George and the popular prestige thereby accruing have encouraged a belief in the Board of Trade as a *deus ex machina* and in industrial intervention as a road to popularity for aspiring politicians, which may have very mischievous consequences. These things will not be forced, and any tendency to use intervention in a fussy way for personal reasons only damages the cause of conciliation. A second attempt by Mr. Lloyd George to intervene in one of the cotton disputes was less happy. The dispute was settled, but not through his offices, and the misapplied eulogies of an ill-informed Press merely excited the resentment of the parties to the dispute. His successor at the Board of Trade, Mr. Churchill, has carried on the torch, and one step, of some interest, has been taken under his auspices. An official court of arbitration has been set up, to which parties in a dispute may have recourse if they wish. This is an extension of the means of official mediation previously exercised by the Board of Trade under the Conciliation Act of 1896, which gave power to the Board to appoint a conciliator in trade disputes, and, if requested by both parties, an arbitrator. That Act has been useful in a modest way; it has enabled the Board to intervene successfully in a small but growing number of cases in which mutual agreement has failed. There were fourteen such cases in 1905, twenty in 1906, thirty-nine in 1907, and forty-seven during the first eight months of 1908; and the great majority were settled. The new court is intended to popularise intervention by increasing the confidence of disputants in the competency of the tribunal. It will be formed as required, and will consist of three or, if desired, five members nominated from three panels or lists representing (1) employers, (2) employed, (3) disinterested gentlemen of standing to act as chairmen. A court so formed may be strengthened by the addition of technical assessors if desired. It is a well-devised scheme and will probably be useful if applied with discretion.

Thus the principle of mutual agreement and conciliation, with intervention and voluntary arbitration in the background has weathered some severe storms and has emerged from the ordial strengthened and extended. At the beginning of 1908 there were 209 Conciliation Boards existing

in various industries, and during 1907 eighty-nine of them dealt with 1,545 cases, of which 668 were settled by the Boards (197 by arbitrators or umpires), and 789 either withdrawn, referred back or settled independently; the remainder being left over. Clearly the ground previously gained in this direction has not been lost; and the problem of industrial strife has undergone a permanent change. But the elements of trouble remain, and in unfavourable circumstances might easily burst all bonds. The success of all agreements depends on the loyalty of both sides to the bargain, and if workmen consider themselves at liberty to repudiate terms agreed to by their representatives, no arrangement is worth the paper it is written on. Trade Unionism in Great Britain has a very critical time before it, and the spirit of irresponsibility encouraged by the Trade Disputes Act is not a hopeful sign. It is said that the Act only restores the unions to the position they were supposed to occupy before the Taff Vale judgment. That is not true; but even if it were, the great resonance given to their demands and the demonstration of their power afforded by the forcing of the Act on the Government and in Parliament have altered the situation and had a moral influence which can neither be measured by legal technicalities nor compressed within the limits agreeable to prudent counsel or pious hopes.

More recently another trouble has developed within the unions arising out of their political activity and their alliance for political purposes with Socialism, which has been explained above. The Labour Party in Parliament is virtually a Socialist body, but is mainly financed by the trade unions by means of a compulsory levy. This is resented by non-socialist members, who naturally object to being compelled to support men in Parliament whose politics they detest. The legality of the compulsory levy and of the diversion of trade union funds to political purposes has been contested in the courts, particularly by the test case of Osborne *v.* the Amalgamated Society of Railway Servants, an action brought by a branch secretary of the Society against the head Executive and carried to the Court of Appeal, which pronounced in favour of the plaintiff. This judgment made the compulsory Parliamentary levy illegal, and other actions have followed on the same lines. It may be inferred from

the extreme perturbation caused among Labour-Socialists that they are conscious of a strong opposition to their policy among members of trade unions. If, as they allege, the whole future of the party is threatened, that amounts to an admission that it rests upon compulsion and is forced upon at least a large proportion of unionists against their will, for the only thing affected by the judgment is the compulsion. The unions are still at perfect liberty to impose a voluntary levy. The issue is grave; it threatens to break up the unions. The case may be taken to the highest legal tribunal (the House of Lords), but a reversal of the judgment of the Court of Appeal is in the highest degree improbable; nor would public opinion support any proposal for legislation to compel members of trade unions to maintain representatives in Parliament of whose politics they disapprove. That would be an act of tyranny far more intolerable than merely bringing pressure to bear on electors to vote against their convictions, which is so often denounced as violating the liberty of conscience and the sanctity of the ballot box. It would reduce democratic government to a mockery. The situation is a counterpart of that which has led to the formation of anti-socialist unions in Germany; but the antagonism is brought to a much sharper issue. It goes to show that trade unions will sooner or later have to choose between playing the new part of political caucuses or the old one of trade societies, between the practical objects for which they were founded and the hypothetical benefits promised by Socialism.

In the United States also trade unionism is in trouble among the quicksands of the law. The Supreme Court of the United States, in a unanimous judgment delivered in February, 1908, pronounced the practice of blacklisting employers and boycotting their goods a violation of the Sherman Anti-Trust law, and illegal. Nor is the judgment merely on paper. The two most prominent trade unionists in America, Mr. Samuel Gompers and Mr. John Mitchell, have since been convicted and penalised for contempt of court in ignoring an injunction against boycotting. Thus one of its most effectual weapons has been wrested from the hands of the American Federation of Labor. The boycott has been very extensively used to compel employers, among other things, to assist trade unionism by discriminat-

ing against non-union workmen. In the case decided by the Supreme Court it was applied for that purpose against the Loewe Hat Manufacturing Company of Danbury in Connecticut, which refused to "unionise" its factory, that is, dismiss non-union workmen. Such a firm is placed on an "unfair" or "we don't patronise" list, which is published all over the States to prevent people from buying its goods. This proceeding is nowheld to be "in restraint of commerce"; and the peculiar difficulty of the situation is that the very same law, which forbids boycotting, is the great weapon against the malpractices of large combinations of employers. Sauce for the goose is, in fact, sauce for the gander. Another judgment by the Supreme Court, unfavourable to unionism, will be still more difficult to get over. It pronounces the Erdman Arbitration Act unconstitutional. That Act, passed after the Chicago railway strike, forbade railway companies or other carriers engaged in inter-State transport to discriminate against workmen because they belong to a union. It has now been declared an "arbitrary interference with the liberty of contract" and void as contravening the constitution. To amend the constitution of the United States is a somewhat formidable task, and it is easy to see that this judgment may entail very serious consequences for the unions.

The industrial unrest in the three countries during recent years is statistically expressed in the following table compiled from the 21st Annual Report of the United States Commissioner of Labour. It begins with 1899 because that is the first year for which statistics are available for Germany. The figures differ somewhat from those given on pages 564-65; presumably the later version is the more correct.

STRIKES AND LOCK-OUTS, 1899-1905.

Year.	U.K.	Germany.	U.S.A.
1899	719	1,311	1,838
1900	648	1,468	1,839
1901	642	1,091	3,012
1902	442	1,105	3,240
1903	387	1,444	3,648
1904	355	1,990	2,419
1905	358	2,657	2,186

The salient features in this table are the comparatively small number of disputes in the United Kingdom, their marked diminution and the equally marked increase of those in Germany. Of course the number of disputes, though a measure of unrest, does not necessarily indicate the economic disturbance caused; that depends on the number of persons involved and the duration of the stoppage. Thus a single big strike might very well cause more economic disturbance than a hundred little ones. But if we take the total number of persons directly involved in the disputes for the last five years, we get a descending scale for the United Kingdom and an ascending one for Germany, fairly corresponding

Number of Strikers and Persons Locked out.

Year.	U.K.	Germany.	U.S.A.
1901	111,437	60,676	412,537
1902	116,824	64 217	583,447
1903	93.515	120,276	644,014
1904	56,380	137,240	420,662
1905	67,653	526,800	244,811

with the one above and quite as remarkable. The figures do not include other persons affected by the disputes. In face of these figures it cannot be said that Great Britain suffered from labour troubles during the recent depression compared with her competitors. In 1906 and 1907 the figures rose again, the number of disputes increasing to 486 and 601, but comparative statistics for the other countries are not available.

The movement in Germany is remarkable, and is clearly connected with the great growth of trade unionism noted above; for the German statistics give the number of strikes ordered or assisted by labour organisations, and these rose from 650 in 1901 to 1,806 in 1905. By far the most frequent cause in each year was a demand for increase of wages, and the next most frequent cause was a demand for reduction of hours; other prominent subjects of dispute were overtime and reinstatement of discharged employees. An ominous increase in the frequency of two demands is

to be noticed; one is for the recognition of a committee of employees and the other for the discharge of certain persons. Evidently trade unionism is running the usual course in Germany.

The American figures show an up and down movement; but if a longer period be taken and the five years 1901-5 are compared with the previous five 1896-1900, a great increase of disputes is revealed. The average number per annum in 1896-1900 was 1,390, in 1901-5 it was 2,901, or considerably more than double. And here too the hand of the unions is visible. For in the maximum year of 1903 out of 3,494 strikes 2,754 were ordered by labour organisations; in the two following years their activity dropped to 1,895 and 1,552 and the strikes fell accordingly.

These facts regarding Germany and America recall to me the vivid impression I gained of the blindness of employers and lookers on in both countries to what was actually going on about them. They grumbled about trade unionism, but complacently pitied the British employer, whose position they considered much worse than their own in that respect. They did not see that he had already sailed into calmer waters and that their own time had come to face the breakers.

Conclusion.

There is nothing to alter in the general observations that I have made in the concluding chapter. But I can say that my confidence in the immediate future of this country has been steadily confirmed. The process of awakening has gone on, and there are many encouraging signs that our people are responding healthfully to the stimulus of necessity. The revolt against the loafer is in progress, though it needs, perhaps, another dose or two of Socialism to complete it. The extravagant worship of athletics has passed its zenith and is subsiding into a more rational appreciation of their place and purpose. I see a young generation growing up more serious than the last. They are to be found in the university and the technical school. The vogue for rubbish in literature is less predominant than it was; the demand for more solid food is growing, and improved education in beginning to tell. The

attack on religion in the elementary schools has failed. Then the nation is bracing itself to pay the cost entailed by abandoning the cheapest buying market in order to maintain a productive population, and it is realising the mission, the responsibility and the sacrifice of Empire. Tariff reform is at hand, and compulsory service no longer seems an impossible dream. If any one says—But look at the progress of Socialism, I reply that if nothing else will bring about these changes the progress of Socialism can confidently be relied on to do so. For Socialism, in so far as it means moral earnestness and love of justice—and in many that is what it does mean—is itself a good sign; in so far as it means moral irresponsibility, an appeal to base passions and economic chaos, the further it advances the more complete will be the reaction against it in a healthy and vigorous people.

THE END.

INDEX.

A.

Aachen, 131, 178-80, 441, 522, 629.
Accident insurance, 331, 406, 420.
Accidents, 293, 315, 319, 683.
Actors and actresses, 501.
Adjusted incentive, 389, 390, 396, 398.
Adolescence, 19, 603.
Adversity, 661.
Advertisements, 25, 619, 662.
Age limit for children, 228, 298, 318.
Air in factories, 292, 294, 303, 308, 309, 313, 322.
Alabama, 274.
Alkali industry, 379, 383.
Allegheny, 247, 270.
—— county, 264.
—— river, 264.
Alpaca, 90.
Alsace, 128, 579.
Amalgamated Society of Dyers, 97.
—— —— Engineers, 350, 380, 399, 567, 693.
—— —— Railway Servants, 567, 690.
American advertising, 25; alertness, 13; architecture, 18, 244; bosses, 36; confidence, 9; corruption, 9, 11, 244; credulity, 25; emulation, 24; frankness, 4, 7, 343; homicide, 29; houses, 209, 455; humour, 17; hurry, 131, 334, 345; insularity, 27; inventiveness, 21, 232, 234, 335; lawlessness, 28, 564; locomotives, 255; millionairedom, 14; physique, 486; slovenliness, 18, 239; speech, 18, 239; submissiveness, 36; toleration of shams, 25; towns, evolution of, 200; trickiness, 8; vital statistics, 31; vitality, 236, 661; waste of time, 14; women, 34, 503, 516, 587, 661; workmen, 3, 218, 329, 372, 602, 630.
American Federation of Labour, 537, 538, 544.
Americanisation of immigrants, 37, 601.
Anthrax poisoning, 418.
Arbeiterheim, 464.
Arbitration, 562.
Architecture, street, 18, 47, 66, 130, 209, 244.
Arkwright, 50.
Armstrong, 148, 268.
Artisan schools in Germany, 627, 633.
Asa Lees, 59, 71, 170.

Ashley, Professor, 400.
Ashton, Mr., 370.
Athletic sports, 495.

Baldwins, 255.
Baltimore, 199, 262.
Bank holiday, 367.
Barlow and Jones, 59.
Barmen, 131, 151-63, 440, 447, 522.
Barnes, Mr. G. N., 350, 374, 380.
Base-ball, 497.
Baths, in factories, 328; public, 171, 497, 532.
Bautzen, 191.
Bavaria, 128.
Beer, 488, 517.
Benevolent institutions, 144, 171, 280; Chapter X.
Berg country, 151, 172.
Berlin, 129-31, 243, 436, 440, 447, 523.
Betting, 507-11, 657.
Bicycling, 496.
Bigelow Carpet Mill, 219.
Bilston, 115-19, 122-26.
Birmingham, 114, 440, 524.
Birth-rates, 79, 113, 119, 181, 183, 216, 236.
Black bread, 473.
Blackburn, 42, 76-83, 634.
Black Country, 114, 119, 267, 502.
Black Dike, 94, 98.
Blast furnacemen, 120, 354, 364.
"Blind tigers," 513.
"Blue Monday," 516.
Board schools, 616.
Boards of Guardians, 570.
Bochum, 132, 182.
Bodelschwingh, Pastor, 464.
Bolsover, 101.
Bolton, 42, 55-68, 440, 519, 520.
Bookmakers, 507.
Boosting, 24.
Boot and shoe trade, 203, 360, 670.
Booth, Mr. C., 63.
Boston, 205-208, 228, 250, 252, 440, 443, 459, 519, 524, 601.
Bournville, 431.
Braddock, 264, 268.
Bradford, 41, 42, 85-99, 440, 520, 636.
—— Dyers' Association, 91, 97.
Brandenburg, 128, 440.
Brandts, F., 171.
Bread, 469, 470, 471, 472.
Brindley, 49.
British Westinghouse Works, 48, 324, 328.
Broadbent, 101.

Broadway, 228.
Brockton, 203.
Brooklyn, 243.
Brooks, Mr. Graham, 398, 423.
Brown, John, & Co., 102.
Brown & Sharpe, 189, 234, 269.
Brunner, Sir John, 379, 383, 653.
Building bye-laws, 324, 452, 460.
—— societies, 157, 450, 461, 463, 585.
—— trades, 392, 555, 673, 675.
Bushnell, Prof. C. J., 574.

C.

Cammell, Laird, & Co., 102.
Cards, 508, 510.
Carnegie steel works, 267, 339.
Carolina, North, 275, 598, 599.
—— South, 275.
Carpets, 91.
Cartwright, 50.
Census, U.S.A., 31, 201.
Central States, 198.
Certifying surgeons, 293, 297.
Chancellor, William E., 592, 599.
Charity, 570 574, 578.
—— Organisation Society, 583.
Charleston, 36.
Charlottenburg, 207, 441, 631.
Chemicals, 153, 161, 631.
Chemistry, 631.
Chemnitz, 185 97, 440, 514, 522.
Chemnitzer Werkzeug Fabrik, 188.
Chicago, 248, 250, 271, 273, 440-43, 459, 524.
Child labour, 277, 282, 284, 316.
Children, neglect of, 487.
—— number employed, 282, 289, 299, 305.
—— protection of, 284, 285, 288, 298, 304, 311, 315, 316, 318.
"Christian" trade unions (Germany), 171, 547.
Churches in Germany, 150, 187.
Cigar-makers' Union (U.S.A.), 542, 544.
Cincinnati, 273, 443, 459.
Civilisation, 317, 417, 532.
Cleveland (Ohio), 271, 273, 443, 459, 524.
Cleveland (Yorkshire), 114.
Clubs, 514.
Coal, 40, 132, 205, 231, 245, 247, 480.
Cockney speech, 239.
Co-education, 600, 609.
Columbia, 36, 276, 513.
Combing machine, 87.
"Commercialisation" of labour, 397.
Compensation for injury, Chapter IX.
—— —— in England, 417.
—— —— in Germany, 407.

Compensation for injury in U.S.A., 422.
Compulsory education, in England, 617.
—— in Germany, 604.
—— in U.S.A., 597.
Comtelburo, 52, 275.
Confinements, 289, 300, 305, 666.
Connecticut, 198, 199.
Continuation schools, 138, 195, 299, 305, 611, 617.
Co-operation, 395.
Co-operative societies, 68, 474, 585.
Corliss Engine Works, 234.
Corporal punishment, 600, 601.
Correspondence schools, 645.
Cort, Henry, 50.
Cost of bread, 469, 471, 472.
—— of clothing, 481.
—— of food, 466-74.
—— —— in S. Carolina, 279.
—— of living, Chapter XII. Supplementary Chapter, 686-89.
—— of meat, 469, 471.
—— of vegetables, 473.
Cotton Cloth Factory Act, 81, 296, 308.
—— imports, 50.
—— industry in England, 48, 52, 57, 61, 69, 76, 282.
—— —— in Germany, 168, 187, 190.
—— —— in U.S.A., 203, 204, 208, 218, 225, 231, 247, 274, 282.
—— —— organisation in, 561.
—— machinery, 50, 52, 71, 170. See also Machinery.
—— mills, 60, 211, 276.
—— spinners, 60, 61, 212, 226, 393.
"Counts" in cotton yarn, 58.
Cradley Heath, 123.
Cramps, 256.
Crefeld, 131, 163, 168, 516, 522, 581, 629, 636.
"Cribbing" time, 351.
Cricket, 493, 499.
Crompton, Samuel, 50.
Crompton and Knowles, 236.
Crossley, 91, 113, 220.
Crucible steel, 101, 141, 149, 176.
Culture, 519-28.
Cutlers' Company, 100, 111.
Cutlery, 20, 100, 106, 107, 174, 176, 321.
Cyclops Works, 102.

D.

Dangerous Trades, 107, 122, 123, 175, 294, 300, 303, 314.
Darlaston, 122, 124.
Dayton, 273, 441.
Declaration of Independence, 19, 248.
Degeneration, 485.
de Grais, Graf Hue, 32.
Delaware river, 252.
Density of population, 184, 230, 245, 438.

Dewsbury, 43, 91.
Die Deutschen Städte, 400.
Diphtheria, 213.
Dobson & Barlow, 59, 170.
Dodge, 232.
Donisthorpe, 87.
Dortmund, 132, 180, 181.
Draper Company, 236, 432.
Dresden, 133, 135, 185, 193, 197, 440.
Dress materials and designs, 638, 639.
Drexel Institute, 260, 643.
Drink, 511-19.
Drunkenness, 54, 167, 216, 224, 456, 515, 518.
Dürr boilers, 135.
Düsseldorf, 131, 133-38, 440, 448, 517, 522, 611.
—— Exhibition, 135.
Duisburg, 131, 629, 630.
Dumping, 136, 189, 649.
Duquesne, 264, 268.
Durfee mills, 211.
Dust, 175, 324, 327.
Dyers, 97.
Dyes, 152, 161.

E.

Education, elementary, Chapter XVI.
—— —— in England, 615.
—— —— in Germany, 604.
—— —— in U.S.A., 592.
—— higher, 594, 595, 605, 617, 625.
—— national, aim of, 592, 605, 616, 620.
—— public and private, 589.
—— technical, Chapter XVII. (see also Technical Schools).
—— —— in England, 625.
—— —— in Germany, 632.
—— —— in U.S.A., 641.
Eight hours' day in U.S.A., 367.
Elberfeld, 131, 151, 162, 192, 440.
—— poor law system, 578.
Electricity in industry, 245, 277, 76, 631.
Electric trams, 528. See Locomotion.
Electro plating, 101.
Elementary schools, statistics of, 593, 595, 621, 622.
Elsässische Maschinenbau Gesellschaft, 170.
Elswick, 148, 268.
Emigration of Germans, 451.
Employers' Liability, 417. See Compensation, Accident insurance, Insurance.
Engineering and Shipbuilding Federation, 399.
Engineering, students of, in Germany, 631.
—— —— U.S.A., 439.
English advertising, 26, 619; corruption, 10; dirtiness, 329, 455, 481; energy, 23, 662; houses, 67, 454, 457; insularity, 27; inventiveness, 22, 49, 337, 344, 654; manufacturers, 5, 338, 339, 653, 667 reticence,

6; physique, 486; solidity, 22; suspiciousness, 5; vital statistics, 31; vitality, 665; wastefulness, 487, 586, 655; women, 35, 456, 487, 502 508, 515, 655; workmen, 6, 324, 328, 337, 371, 372, 390, 630, 653, 663.
Equality of opportunity, 14, 593, 622.
Essen, 131, 139-51, 265, 268, 440, 447, 524, 526.

F.

Fabrik, 298, 611.
Fachschulen, 196, 627.
Factories, air in, 292, 293, 302, 308, 312, 322; basins, 330; baths, 328, 329; canteens, 331; cloak-rooms, 328; dining-rooms, 331; health, 292, 302; inspection, 297, 304, 314, 316; light, 302, 306, 325; lockers, 329; order, 331; safety, 292, 302, 313, 315, 331; sanitation, 328; special rules, 294, 303, 314.
Factory Laws, Chapter V.
—— —— in England, 288-98.
—— —— in Germany, 298-310.
—— —— in U.S.A., 310-20.
—— —— compared, 298-310, 317, 320.
—— —— observance of, 30, 319.
—— legislation, effect of, 306, 318.
—— —— history of, 286.
Factory legislation, principles of, 283, 285, 307.
—— plant, 332-47.
—— premises, 302, 321-24.
—— rules, 301, 305.
—— "system," 143, 284, 395, 533.
Fall River, 208, 210-16, 340, 440, 443.
Fall River Iron-works Company, 211.
Farben Fabriken, 158, 161.
Fashions in dress materials, 638.
Fehse, Professor, 628.
Feig, Dr. Johannes, 136.
Fencing of machinery, 326. See also Factories.
Fiction, 520.
Files, 101, 107, 173, 232, 554.
Fines, 296, 301, 314.
Firth, T., & Sons, 102.
Fish, 474.
Fison & Co., 94.
Food, expenditure on, 475.
—— prices of, 469.
Football, 64, 343, 491, 496-500, 509.
Foreign population, in Boston, 208; Fall River, 214, 216; Lawrence, 224; Lowell, 217; New York City, 239; Philadelphia, 251; Pittsburg, 271; Providence, 236-38; Rhode Island, 230; Southern States, 278; U.S.A., 1, 37.
Foremen, 343, 534.
Foster, John, & Son, 94, 99.
Foundries, 189, 331.
Frankfurter Zeitung, 526.
Free labour, 556-58.
Free trade, 649.

Freiberg, 191, 629.
French Canadians, 215-17, 526.
Friendly Societies, 585.
Fuel, 480.
Funeral benefit, 544.
Fustian, 57.

G.

Gambling, 507.
Games, 489-500.
General Slocum, The, 30.
Georgia, 274, 317.
German, cleanliness, 329, 454; demand for information, 32; formality, 5; officialism, 626; physique, 486, 488; plodding, 12; respect for law, 27, 302, 606; science, 12, 337, 639; statistics, 32; thoroughness, 12, 22, 343, 652; vitality, 181, 183, 653; women, 33, 487; workmen, 58, 122, 324, 329, 343-45, 374, 384, 400, 631, 656, 657.
Gewerbeschulen, 628.
Gewerkschaften, 545.
Glauchau, 190, 194.
Golf, 490, 495-500.
Gospel of Ease, 660-65.
Greenville, 276.
Grinders, 327.
Gruner, Justus, 140.
Gütersloh, Mr. F. N., 154.
Gutentag'sche Sammlung, 32.
Guyot, M. Yves, 397, 423.
Gymnastics, 496-99.

H.

Hadfield, 102.
Hagen, 132, 182.
Half-timers, 288, 299.
Halifax, 42, 91, 104, 113, 220, 257.
Hall, Professor Stanley, 19, 603.
Hamburg, 207, 523, 580, 581.
Hamilton's Report on Manufactures, 200.
Handbuch der Verfassung, 32.
Hanging railway of Elberfeld-Barmen, 153.
Haniel and Lueg, 135.
Hardware, 122.
Hargreaves, 50, 77.
Harnisch's *Jahrbuch*, 436.
Harper, President William R., 593, 603.
Harris, Dr. William T., 31, 596.
Harrisburg, 246.
Harrison, Miss A., 285.
Hartmann, Richard, 188.
Hattersley, 91.
Health in factories, 291, 302, 312.
Heilmann, 87.
Henckels, Peter, 174.
Henderson, C. R., 574, 580.

Henshaw, Thomas, 69.
Herdecke, 132.
Hetheringtons, 59, 170, 226.
High speed steel, 668.
Hirsch-Duncker Trade Unions, 353, 543, 544-51.
Hörde, 132.
Holden, Isaac, 88, 94.
Holidays, 290, 300, 305, 314, 367.
Homestead, 264, 267, 339, 361.
Hopedale, 432.
Horse-racing, 507-10.
Hours of work, Chapter VII. Supplementary Chapter, 677-79.
Hours of work, economics of, 369.
—— —— comparison of, 365, 374, 677.
—— —— in England, 349-51, 677.
—— —— in Germany, 351-58, 666, 677.
—— —— in U.S.A., 359-65, 677.
—— —— regulation of, 288, 289, 299, 311-19.
—— —— shortening of, 366-70, 374, 400.
House of Commons, 626, 663.
House density, 438-44.
—— ownership, 458.
Houses, American, 209, 455.
—— English, 454, 457.
Housing, Chapter XI. Supplementary Chapter, 684-86. See also Rent.
—— agencies, 460-65.
—— by building societies, 157, 450, 460, 463, 585; employers, 94, 146, 158, 280, 461, 465; municipalities, 461, 462; State, 462.
—— in Barmen, 157, 447; Berlin, 130, 437, 440, 447; Blackburn, 77; Bolton, 62, 67, 440; Bradford, 92, 440; S. Carolina cotton towns, 278; Chemnitz, 192, 440; Crefeld, 166; Düsseldorf, 136, 440, 448; Elberfeld, 157, 440; Essen, 146, 440, 448; Fall River, 212, 440-43; London, 437, 440, 445, 461; Lowell, 220; München-Gladbach, 170; New York, 243, 440-43; Oldham, 75, 440; Philadelphia, 251, 440-43; Pittsburg, 271, 440-43; Saltaire, 94; Saxony, 191, 440; Sheffield, 104, 440; Solingen, 177; Wolverhampton, 124, 125.
—— quality of, 452-56. See also Slums.
—— summary comparison of, 456, 684.
Howard and Bullough, 59, 170.
Huddersfield, 43, 91, 104, 113, 442.
Hudson River, 241.
Huntsman, 101.
Hustling, 371.
Hutchins, Miss B. L., 285.
Hydraulic press, 109, 339.

I.

Illegitimate Births, 151, 197.
Illinois, 198, 199, 201, 246, 273, 319, 459.
Industrial disputes. See Labour disputes.
Infantile mortality, 78, 81, 93, 104, 124, 158, 192, 197, 216, 231.
Infirmity insurance, 412.
Inspectors of factories, 297, 304, 316.
—— —— bribery of, 11.
—— —— female, 297, 304, 316, 330.

Insurance, 403; against accidents, 406, 421; German State, 403.
Intensive principle in wages, 392.
Inventions, 21-22, 232-34, 336, 337, 343.
Iron and steel, 101, 114, 116, 132, 246, 264-266, 273-275.
"Isms," 32, 424, 512.
Italians, 236, 371, 450.

J.

Jacquard looms, 152, 190, 256.
Jewelry industry, 232.
Joliet, 273.

K.

Kegel, 496.
Keighley, 43, 91, 225.
Kidderminster, 114, 220.
Kindergartens, 601.
Klausthal, 191, 629.
Knights of Labour, 538.
Kölnische Zeitung, 526, 637.
Krahnen and Gobbers, 167.
Krefeld. See Crefeld.
Krupp, Alfred, 141-44, 268.
—— Peter Friedrich, 141.
Krupp's works, 139-41, 329, 448, 524.
—— —— compared with Elswick, 148.
Kuypers, Dr., 617.

L.

Labour Colonies, 576-82.
—— day in U.S.A., 368.
—— disputes, Chapter XIV. Supplementary Chapter, 690-700.
—— —— and Trade Unions, 557.
—— —— in Germany, 565; Massachusetts, 563; United Kingdom, 561; U.S.A., 563, 564.
—— leaders, 535, 557.
—— organisation, 535, 558; in cotton trade, 561. See also Trade Unions.
—— registries, 582.
Lancashire, 42, 47, 48-53, 184, 209, 439, 634.
—— machinery, 58. See also Machinery (English).
Landsberg, Dr. Otto, 157.
Lavatories, 294, 303, 315, 328.
Lawrence, 220-224.
Law, contempt for, in U.S.A., 27, 564.
—— respect for, in Germany, 27, 302, 606.
Lead glazes, 309.
—— poisoning, 107, 123, 418.
Leeds, 41, 42, 85, 90, 92, 112, 225, 339, 440, 524.
Leicester, 114, 469.
Leipzig, 185, 197, 440, 524.
Les Conflits du travail, 397, 423.
Lewis, Messrs. C. & E., 672.
Libraries, public, 519-26.

Lighting, street, 249, 532.
Lister, Mr. S. C. (Lord Masham), 87, 268.
Liverpool, 55, 455, 524.
"Living wage," 385.
Locks and Keys, 120.
Locomotion, 465, 482, 525; in New York, 247.
Lowe, Ludwig, 234.
London, 10, 45-47, 242, 243, 437, 440, 526, 618, 634.
Lord, 170.
Lowell, 208, 217-224.
Luddism, 89.
Ludlow, 432, 457.
Lynching, 28.
Lynn (Mass.), 203.

M.

Machine Tools, 667-69.
Machinery, American, 21, 189, 211, 222, 234-236, 256, 268, 277, 332, 345, 643; English, 52, 53, 72, 88, 167-170, 211, 225, 226, 257, 332-39; German, 52, 135 188, 189, 235, 335, 344.
—— influence of, 346.
—— opposition to, 57, 77, 86-89, 553.
McKeesport, 247, 264, 270.
Manchester, 41, 47-55, 185, 440, 524.
Manchesterism, 283, 287, 652.
Manhattan, 242-44.
Manningham, 90, 95.
Manufacturers, American, 337, 643, 651; English, 5, 337-39, 369, 653, 663, 667; German, 337, 344.
Manufactures, distribution of, in Germany, 127; in U.S.A., 198.
—— location of, 39, 431.
Markets, 64, 178, 474.
Masham, Lord, 98. See also Lister.
Massachusetts, 198-202, 208, 230, 231, 275, 311, 440-46, 459, 642.
—— Institute of Technology, 207, 235, 645.
Meakin, Mr. Budgett, 457.
Meals in factories, 288, 289, 290, 298, 299, 312, 316, 350, 361, 366.
Mechanics, English and German, 121, 345.
Meerane, 191, 197, 441.
Meissen, 191, 197
Melodrama, 504, 505.
Merrimac, river, 217, 220.
Methods of remuneration, 390. See also Wages, Profit-sharing.
Midlands, 114.
Military training, 332, 487, 614, 657.
Minimum wage, 391. See Wages.
Mitchell, Mr. John, 537, 543.
"Model" establishments, 286.
—— settlements, 143, 158, 279, 426.
Modern Methods of Charity, 574.
Mohair, 90.
Monongahela river, 264-68.
"Moseley Commission" (Labour), 337, 371.

Mühlheim, 132.
München-Gladbach, 131, 168-72, 450.
Municipal activity, 66, 74, 124, 137, 156, 215.
—— administration, 9, 244, 249, 434, 462, 531.
—— libraries. See Libraries.
—— theatres, 502, 504.
Music, 506; in Yorkshire, 98.
Music-halls, 502, 506.
Musical comedy, 504, 505.

N.

Narragansett Bay, 233.
National Anti-Gambling League, 508.
—— Free Labour Association, 557.
Neefe's *Statistisches Jahrbuch*, 32, 468.
Negroes, 253, 278.
Neviges, 158, 427, 431.
New Bedford, 208, 214, 226-228.
—— England States, 198-202, 204, 230.
—— Jersey, 198, 199, 318, 320, 459.
—— York City, 209, 227, 238-244, 249, 440-43, 459, 601, 644.
—— —— harbour, 241.
—— —— State, 198, 199, 318, 367, 459, 642.
Newcastle, 378, 441, 515.
Newspapers, 525.
Noble combing machine, 88.
Noils, 91.
North of England industrial area, 41.
Northrop loom, 59, 279, 335, 343.
Nottingham Manufacturing Co., 270.

O.

Oberhausen, 132.
Ohio, river, 245, 263.
—— State, 198, 201, 246, 273, 318, 459, 599.
Old-age pensions, 412.
—— Act of 1908, 682.
Oldham, 42, 68-76, 440, 502.
—— speed list, 393.
Oliver, Dr. Thomas, 107, 123.
Ölsnitz, 191.
Olympia mills, 277.
Open fire-place, 480.
Organisation of employers, 536, 559.
—— of labour, 533-35, 537, 540, 561. See Trade Unions.
Outdoor relief, 571-74.
Overcrowding, 79, 130, 157, 444-46.
—— in factories, 291, 292.
Overtime, 364.
Owen, Robert, 286.
Oysters and typhoid fever, 213.

P.

Pacific Mills, 225.
Papers of identification, 575.
Parker, Thomas, Ltd., 122.
Parks, 47, 66, 77, 98, 103, 158, 187, 227, 244, 250, 272.
Patent Act of 1907, 672.
Patent laws, 342.
Patent Shaft and Axle Co., 122.
Patents, 344.
Paternalism, 330, 423.
Patriotism, teaching of, 38, 601, 604.
Pauperism, Chapter XV.
—— —— cost of, 580.
—— —— in England, 570.
—— —— in Germany, 575.
—— —— in trading and manufacturing towns, 55.
—— —— in U.S.A., 574.
Pawnbrokers, 587.
Pawtucket, 233.
Pelzer, 279, 432.
Pennsylvania, 198, 199, 230, 245, 315, 440, 459, 599, 642.
Philadelphia, 207, 228, 247, 248-62, 440, 443, 459, 601, 644.
Philadelphia Record, 30.
Phthisis, 175.
Physical deterioration, 286, 484.
Picketing, 540-42, 568.
Piece work, 377, 391.
Pittsburg, 145, 246, 247, 262-72, 320, 440, 443, 459, 519, 644.
Platt Brothers, 59, 71, 170, 211, 336.
Plauen, 191, 197, 629.
Poles, 450, 517.
Police, 29, 47, 243.
Polytechnics in London, 635.
Poor law in England, 570.
—— —— in Germany, 575.
—— —— in U.S.A., 574.
—— —— system of Elberfeld, 159, 578.
—— whites, 278.
Port Sunlight, 431.
Potomac river, 221.
Potteries, 39, 116, 502.
Poverty, 478, 587, 656, 660.
Premium bonus, 394.
Premiums, 397.
Preston, 42, 55, 80.
Price lists (wages), 376, 381, 391, 393, 398.
Prices of food, 469.
Priestleys, 95.
Printers' Union (Germany), 551.
Private schools in U.S.A., 594.
Product-sharing, 402.
Profit-sharing, 394, 401, 676.
Progress, 141, 347, 660.
—— of the German working classes, 400.

Pronunciation, 239, 240, 607, 618.
Prosperity, 659-62.
Protected persons, 288, 298, 311.
Protection, 649, 650, 664.
Providence City, 231, 233-38, 440, 443, 459.
Prussia, 127, 304, 606-608, 609-11.
Public baths, 171, 497, 532.
—— houses, 511.
—— libraries, 519.
—— schools in England, 616.
—— —— in Germany, 604.
—— —— in U.S.A., ii. 593.

R.

Railways, comparison of, 531.
—— influence of, 14, 51, 127, 132, 201.
Railway rates, 281.
—— Brotherhoods (American), 538.
Relieving officer, 572.
Religious teaching in schools, 601, 606, 616, 623.
Remscheid, 131, 173.
Rent, 436-38, 684-85. See also Housing.
—— expenditure on, 479.
Restriction of output, 553.
Reuss, 184.
Rhine, 132, 133.
Rhineland, 127, 131, 184, 354, 440, 462, 463.
Rhode Island, 198, 199, 318, 459, 598.
Romans, 48, 56.
Roosevelt, President, 9.
Rose, Dr., 629.
Rothe Erde works, 179.
Rowing, 496.
Rowntree, Mr. B. S., 478, 480, 509, 587, 660.
Rowntree, Mr. J., 513.
Royal Family, The English, 626.
Ruhr river, 132, 180.
Ruhrort, 132, 180.

S.

Sächsische Maschinen Fabrik, 188.
Safety in factories, 292, 302, 313, 315, 332.
Salford, 53, 104.
Salt, Sir Titus, 87, 90, 94.
Saltaire, 92, 94, 431.
Sanatoria, 416.
Sanitation, 244, 455.
Savings banks, 585.
Saxons, 184, 185.
Saxony, 127, 184-197, 304, 354, 357, 440, 605, 608, 611.
Scandinavians, 37, 229, 460, 588.
Schiess, Ernst, 135.
Schmoller's *Jahrbuch*, 32.

Schnapps, 516.
Scholarships, 595.
School administration, in England, 616, 621; in Germany, 610; in U.S.A., 598.
—— boards. See above.
—— buildings, 601, 610.
—— curriculum, 601, 608.
—— inspector in Germany, 610.
—— superintendent in U.S.A., 593-98.
—— teachers, in England, 616, 619; in Germany, 608; in U.S.A., 599.
—— year, 597, 609.
Schools, elementary, in Blackburn, 82; Bolton, 68; Bradford, 98; Chemnitz, 194; Crefeld, 168; Düsseldorf, 137; Essen, 150; Fall River, 215; Lowell, 223; Oldham, 74; Philadelphia, 260; Pittsburg, 272; Providence, 238; Sheffield, 110.
—— English "public," 491, 590, 646.
—— higher, in Germany, 625; in U.S.A., 594.
—— statistics of, 594, 610.
"Scrapping," 71, 269, 340.
Sects in Germany, 158.
Sedgwick, Professor William T., 213.
Self-acting mule, 50, 58, 314.
Shanghai trade, 78, 280.
Sheffield, 41, 99-112, 145, 176, 265, 321, 327, 440, 444, 453, 519, 637, 669.
Shifts, working, 349, 354, 357, 361, 370.
Shipley, 92, 94.
Shops, 65, 250.
Sick Insurance, German, 404.
Siemens, 268, 344.
Silesia, 128, 354, 355.
Silk industry, 90, 164.
Sky-scrapers, 130, 209, 244.
Slang, 239.
Sliding scales, 395.
Slums, 67, 77, 92, 104, 124, 212, 252, 271, 453.
Smoke, 53, 67, 104, 145, 162, 182, 207, 209.
Social Democracy, 144, 171, 180, 197, 409, 415, 426, 452, 545-47, 549, 607.
Social Democratic Trade Unions, 544, 566.
Social Unrest, 398, 423.
Socialism, 691, 696, 701.
Solingen, 100, 103, 131, 172-76, 327.
South Metropolitan Gas Co., 395, 401.
Southern States, 198, 274.
Spartanburg, 276.
Spinning Jenny, 50.
Spring Garden Institute, 260.
Staffordshire, 114-16, 439, 634.
State Board of Arbitration, Mass., 218.
—— Insurance German, 307, 403-17, 652.
Steel manufacture, at Essen, 149; Homestead, 267; Pittsburg, 246, 247, 263; Sheffield, 101, 108.
Steel, high speed, 663.
Street architecture. See Architecture.
—— lighting, 249, 532.
—— locomotion, 154, 241, 465, 482, 528.

Street paving, 162, 228, 249, 532.
Strike, at Fall River, 281, 387; at Lowell, 218; at Willenhall, 121.
—— pay, 543.
Strikes. See Labour Disputes.
Suffolk, cutlery works, 176.
Suicide, 197.
Sweating, 287, 385.
Swimming, 497.

T.

Taff Vale Case, 539, 567, 690.
Tariff Reform, 701.
Tariffs, 262, 649, 650.
Taxes, 482.
Teachers, salaries of, in England, 620; Germany, 608; U.S.A., 599.
—— sex of, in England, 620; Germany, 610; Prussia, 609; U.S.A., 599
—— status of, in England, 621; Germany, 609; U.S.A., 600.
—— training of, in England, 616, 619-23; Germany, 608; U.S.A., 600.
—— wastage of, 600, 620.
Technical Education, Chapter XVII.
—— schools, American, 641-46; English, 630-41; German, 627-31 compared, 635-40, 644-46.
—— —— Aachen, 179, 628.
—— —— Barmen, 156, 628-31.
—— —— Berlin, 627, 633, 636.
—— —— Birmingham, 633, 636, 637.
—— —— Blackburn, 82, 635.
—— —— Bolton, 67, 633, 634.
—— —— Bradford, 97, 636.
—— —— Chemnitz, 195, 627-33.
—— —— Crefeld, 164, 627-33, 637.
—— —— Duisburg, 137, 627, 634.
—— —— Düsseldorf, 137, 627, 634.
—— —— Fall River, 215.
—— —— Hagen, 182, 627, 634.
—— —— Lancashire, 634.
—— —— London, 634.
—— —— Lowell, 222, 643.
—— —— M. Gladbach, 169, 627, 637.
—— —— New Bedford, 226.
—— —— New York, 643.
—— —— Oldham, 73.
—— —— Philadelphia, 259, 642, 643.
—— —— Pittsburg, 644.
—— —— Rhineland, 137.
—— —— Sheffield, 111, 637.
Technische Hochschule, 180, 207, 626-32.
Temperance, teaching of, 601.
Theatres, 73, 124, 501.
Threlfall, 59, 170.
Thrift, 584.
Time work, 391-94.
Times, The, 261, 526.

Tinning and enamelling, 123.
Toledo, 443.
Town planning, 685.
Towns, growth of, 43, 452.
—— love of, 44, 65.
Trade Disputes Act of 1906, 690.
—— Union label, 542.
—— —— leaders. See Labour leaders.
Trade Unions, Chapter XIV. Supplementary Chapter, 689-700.
—— —— American, 537, 563-65, 690, 697.
—— —— British, 537, 560-67, 689, 692, 696.
—— —— "Christian," 171, 547.
—— —— German, 537, 545-51, 689, 690.
—— —— "Hirsch-Duncker," 353, 543, 544-50.
—— —— "Independent," 551.
—— —— and disputes, 557, 560.
—— —— and employers, 60, 71, 78, 235, 552, 559.
—— —— and English industries, 551-59.
—— —— and free labour, 556.
—— —— and machinery, 78, 553.
—— —— and paternalism, 424.
—— —— and unemployment, 544.
—— —— and wages, 392, 399.
—— —— charges against, 553.
—— —— constitution of, 538.
—— —— funds of, 543.
—— —— good effects of, 558.
—— —— income of, 538.
—— —— legal position of, 539-42, 690.
—— —— payments by, 543.
Tramways, 528. See Street Locomotion.
Transport, importance of, 39, 132, 205, 652.
Truancy, 601, 609.
Truck. See Wages, payment of.
Tuberculosis, 416, 480.
Tweedales and Smaley, 170.
Tyneside, 322, 441, 487.
Typhoid fever, 213, 220, 261, 272.

U.

Unemployed, 573, 654, 664.
—— benefit, 544.
Unemployment, 572, 659.
United Mines Workers (U.S.A.), 545.
—— States census, 3, 31.
—— —— resources of, 200, 648.
—— —— Steel Corporation, 270, 401, 645.
Universities, American, 594, 641, 642.
—— English, 637.
—— German, ii. 626-31.
Upholstery, 257.
Urbanisation, 438, 450, 484.
Urwick, E. J., 118, 478.

V.

Vagrants, 571-74, 577-82.
Van Vorst, Mrs., 587.
Ventilation. See Air and Factories.
Vickers, Sons & Maxim, 102, 108.
Villages, industrial, 44, 172, 184, 276.
Vital statistics, Aachen, 180; Barmen, 158, 163; Blackburn, 83; Black Country, 125, 126; Bolton, 68; Bradford, 99; Crefeld, 168; Dortmund, 182; Düsseldorf, 138; Elberfeld, 158, 163; Essen, 151; Fall River, 216; Lawrence, 225; Lowell, 224; München-Gladbach, 172; New Bedford, 228; Oldham, 76; Providence, 236, 238; Prussian iron and mining towns, 183; Saxon towns, 197; Sheffield, 112; Solingen, 177; American, English and German, 31.
Vitality, national, England, 113, 119; 656-65; Germany, 181, 182, 652; U.S.A., 236, 661.
Vohwinkel, 153.
Volks-bibliotheken, 522.
Volks-schule, 605.
Voluntary schools, 615-17, 623.

W.

Wages, Chapter VIII. Supplementary Chapter, 672-76.
—— in Blackburn, 78; Bolton, 61, 62; Bradford, 96; Chemnitz, 190; Crefeld, 167; Fall River, 212; Homestead, 267; Lowell, 218; Oldham, 71; Philadelphia, 255-57; Sheffield, 110; Solingen, 177; S. Carolina, 279; Wolverhampton district, 120.
—— comparisons of, 377-83, 673.
—— cost of, 383.
—— cutting of, 386 391, 398.
—— differentiation of, 388, 398.
—— economics of, 383.
—— excess and deficiency of, 384.
—— minimum, 391.
—— payment of, 296, 301, 305.
—— piece, 391.
—— time, 391-93.
Wakes week, 73, 368.
Walker, Samuel, 101.
Walking delegate, 565.
Walsall, 115-19, 124-26.
Warming of factories, 325.
Washington, 29, 207, 221, 227.
Water in industries, 40, 49, 99, 132, 151, 173, 217, 245, 277.
Water supply, in American towns, 213, 214, 220, 261; English, 454 German, 150, 166, 173; London, 47.
Weavers, 76, 82, 89, 96, 167, 218, 257; 381-83.
Weaving shed, 82, 326.
Wednesbury, 115-22, 126.
West Bromwich, 115, 116.
Western States, 198.
Westinghouse, Mr. George, 268, 341.
—— works at Manchester, 48, 324-28, at Wilmerding, 268.
Westphalia, 128, 132, 180, 184, 354-56, 462-65.

Westphalians, 182, 548.
White House, The, 11.
Whitworth, 667.
Willenhall, 115-21, 124-26.
Wilmerding, 264-68, 269.
Wolverhampton, 114-26.
Woman who toils, The, 587.
Women, in England, 34, 64, 456, 487, 503, 509, 656; in Germany, 33, 487, 517; in U.S.A., 33, 504, 516, 587, 661.
Women and betting, 509.
—— and drink, 456, 516.
—— and industries, 76-80, 91, 103, 282, 300.
—— and markets, 64, 178.
—— and music halls, 503.
—— protection of, 285, 289, 300, 305, 312, 315, 666.
—— teachers, 599, 609, 610, 620.
Wool combing, 87, 232.
—— industry, 84, 95, 152, 190, 247.
—— sorters, 96.
Worcester (Mass.), 203, 228.
Worcester Spy, 229.
Work, 372-74, 651, 652, 658.
Workhouse, 570-74, 578-82.
Workmen, in England, 6, 61, 323, 328, 336, 372, 373, 390, 486, 630, 654, 663; Germany, 58, 121, 324, 329, 344, 345, 375, 400, 486, 487, 630; U.S.A., 2, 218, 329, 372, 486, 602, 630.
—— encouragement of, 122, 341.
Workmen's Compensation Act, 417, 679-82. See Accident Insurance and Compensation.
Worsted, 87, 96, 231-33.
Wright, Mr. Carroll D., 31, 68, 320.
Wupper river, 151, 161.
Wuttke, Dr., 400.

Y.

Yorkshire, 41, 83, 85, 128, 439, 634.
Yorkshiremen, 5, 181, 558.
Young persons, 289, 299, 305, 312.
Youthful workers, 299, 666.

Z.

Zeiss, 401.
Zimmermann, Dr. W., 353-55.
Zittau, 197.
Zuchthaus-gesetz, 546-50.
Zwickau, 191-93, 197.

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